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JRW

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March 7, 2006

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Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Art Unit 2631

Attn: Certificate of Correction Branch

Re: U.S. Issued Patent
Patent No. 6,853,690; Issued: February 8, 2005
For: **Method, System and Apparatus for Balanced Frequency Up-
Conversion of a Baseband Signal and 4-Phase Receiver and
Transceiver Embodiments**

Inventors: Sorrells *et al.*
Our Ref: 1744.0450003

Certificate

MAR 10 2006

of Correction

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Request for Certificate of Correction Under 37 C.F.R. § 1.322 (with copy of 144 pages of formal drawings, filed on November 16, 2004, and return date-stamped postcard);
3. Certificate of Correction (Form PTO/SB/44); and
4. Return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

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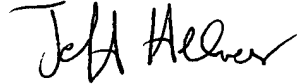
MAR 13 2006

Commissioner for Patents
March 7, 2006
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



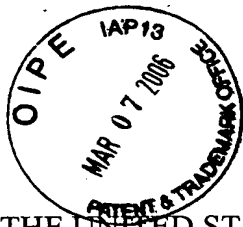
Jeffrey T. Helvey
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JTH/lam
Enclosures

502629.1

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent of:

Sorrells *et al.*

Patent. No.: 6,853,690

Issued: February 8, 2005

For: **Method, System and Apparatus for
Balanced Frequency Up-
Conversion of a Baseband Signal
and 4-Phase Receiver and
Transceiver Embodiments**

Confirmation No.: 7843

Art Unit: 2631

Examiner: Phu, Phuong M.

Atty. Docket: 1744.0450003

**Request for Certificate of Correction
Under 37 C.F.R. § 1.322**

Attn: Certificate of Correction Branch

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

It is hereby requested that a Certificate of Correction under 37 C.F.R. § 1.322 be issued for the above-captioned United States Patent. This Certificate of Correction is being requested due to mistakes which appear in the printed patent. These mistakes were made by the U.S. Patent and Trademark Office.

Specifically, the printed patent contains the following errors for which a Certificate of Correction is respectfully requested:

The drawings that issued with the patent are incorrect. On November 16, 2004, patentees filed 144 pages of formal drawings to replace the originally filed informal drawings.

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In addition to the drawing correction, an Amendment was filed on November 16, 2004 to make some changes to the specification. These changes were not reflected in the issued patent. The changes are as follows:

In column 5, line 65, replace "FIGS. 55A-D illustrates" with --FIGS. 55A-D, which includes FIGs. 55A, FIGs. 55B1-55B4, FIGs. 55C1-55C3, and FIG. 55D, illustrates--.

In column 5, line 67, after "invention;", insert -- FIGs. 55B1-55B4 should be referred to for all references to FIG. 55B in the specification; FIGs. 55C1-55C3 should be referred to for all references to FIG. 55C in the specification;--.

In column 6, line 45, replace "FIG. 70A illustrates" with -- FIG. 70A, which includes FIG. 70A1 and FIG. 70A2, illustrates--.

In column 6, line 46, after "invention,", insert -- FIGs. 70A1 and 70A2 should be referred to for all references to FIG. 70 in the specification;--.

In column 6, line 52, replace "FIG. 70E illustrates" with -- FIG. 70E, which includes FIG. 70E1 and 70E2, illustrates--.

In column 6, line 53, after "invention;", insert -- FIGs. 70E1 and 70E2 should be referred to for all references to FIG. 70 in the specification;--.

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Remarks

The above-noted corrections do not involve such changes in the patent as would constitute new matter or would require reexamination.

A completed Form PTO/SB/44 accompanies this request, with the above-noted corrections printed thereon. Accordingly, a Certificate of Correction is believed proper and issuance thereof is respectfully requested.

The Commissioner is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
Attorney for Patentees
Registration No. 44,757

Date: 3/7/06

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Washington, D.C. 20005-3934
(202) 371-2600

498633_1.DOC

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Amendment

Applicants: Sorrells *et al.*

Due Date: November 18, 2004

Art Unit: 2631

Confirmation No.: 7843

Examiner: Phu, Phuong M.

Docket: 1744.0450003

Atty: JTH

Application No.: 09/525,615

Filed: March 14, 2000

For: Method, System and Apparatus for
Balanced Frequency Up-Conversion of a
Baseband Signal and 4-Phase Receiver and
Transceiver

When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

1. SKGF Cover Letter;
2. Issue Fee Transmittal (Form PTOL-85B);
3. Fee Transmittal (Form PTO/SB/17);
4. Amendment Under 37 C.F.R. § 1.312;
5. Letter to the Draftsman;
6. 144 sheets of formal drawings, approval of which is respectfully requested;
7. Return postcard; and
8. PTO-2038 Credit Card Payment Form for \$1,373.00 to cover:
\$1,370.00 Issue Fee; and
\$ 3.00 Advance copies of patent.



Please Date Stamp and Return to Our Courier

Mail Stop: Issue Fee

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO: 6,853,690

DATED: February 8, 2005

INVENTORS: Sorrells *et al.*

It is certified that error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below.

Drawings

Please replace all of the drawings with the attached 144 pages of formal drawings.

Column 5

In line 65, please replace "FIGS. 55A-D illustrates" with --FIGS. 55A-D, which includes FIGs. 55A, FIGs. 55B1-55B4, FIGs. 55C1-55C3, and FIG. 55D, illustrates--.

In line 67, after "invention;", please insert -- FIGs. 55B1-55B4 should be referred to for all references to FIG. 55B in the specification; FIGs. 55C1-55C3 should be referred to for all references to FIG. 55C in the specification;--.

Column 6

In line 45, please replace "FIG. 70A illustrates" with -- FIG. 70A, which includes FIG. 70A1 and FIG. 70A2, illustrates--.

In line 46, after "invention;", please insert -- FIGs. 70A1 and 70A2 should be referred to for all references to FIG. 70 in the specification;--.

In line 52, please replace "FIG. 70E illustrates" with -- FIG. 70E, which includes FIG. 70E1 and 70E2, illustrates--.

In line 53, after "invention;", please insert -- FIGs. 70E1 and 70E2 should be referred to for all references to FIG. 70 in the specification;--.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

1100 New York Avenue, NW

Washington DC 20005-3934

Atty. Dkt. No. 1744.0450003

This collection of information is required by 37 CFR 1.322, 1.323 and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you are required to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

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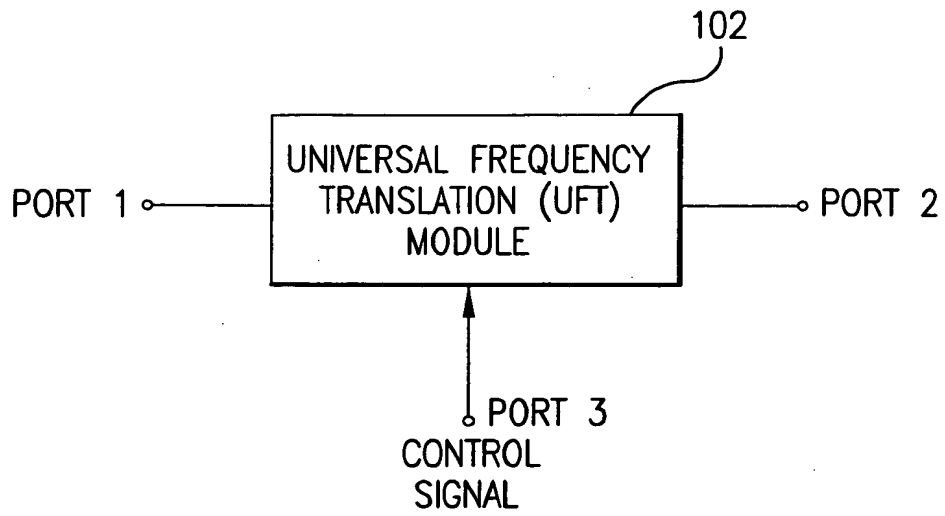


FIG. 1A

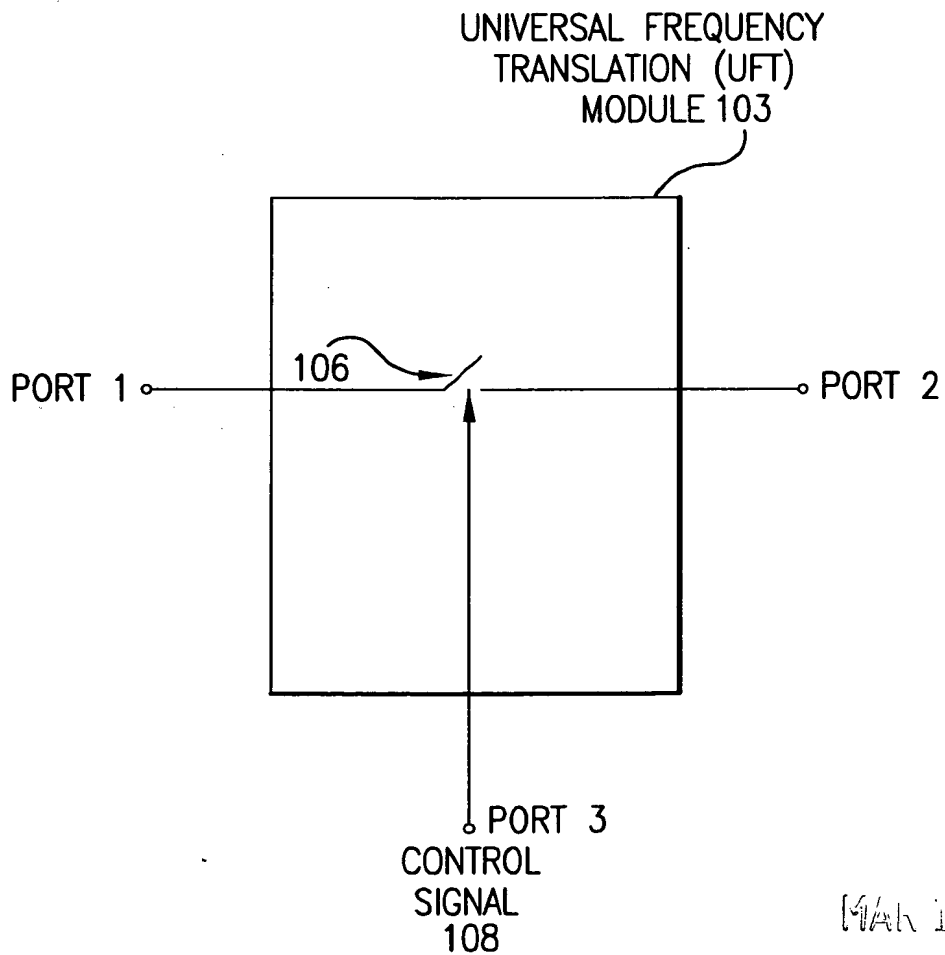


FIG. 1B

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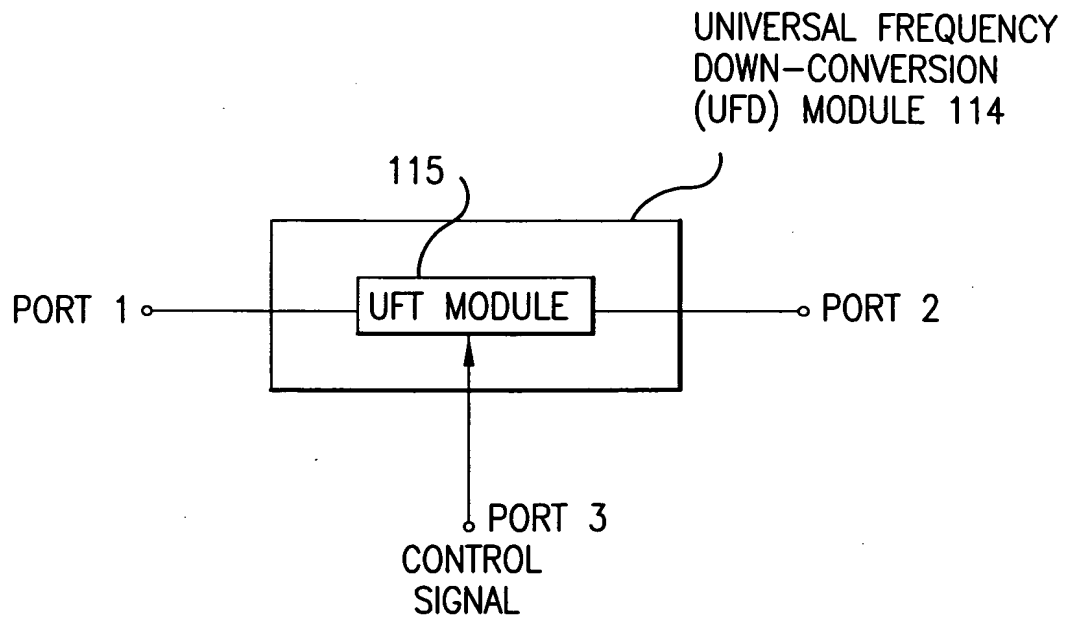


FIG. 1C

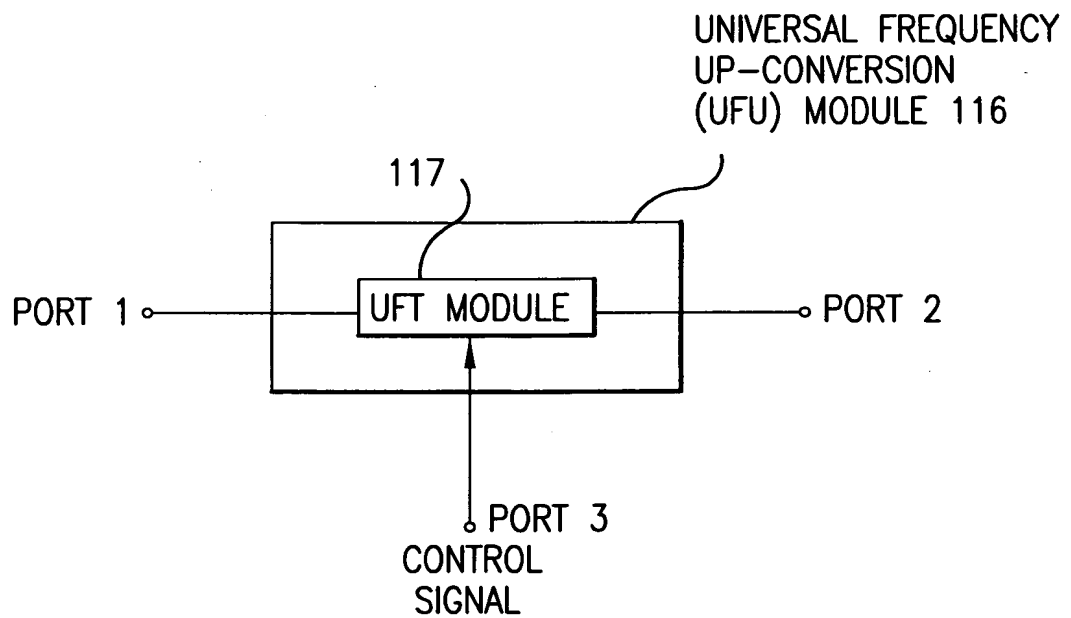


FIG. 1D

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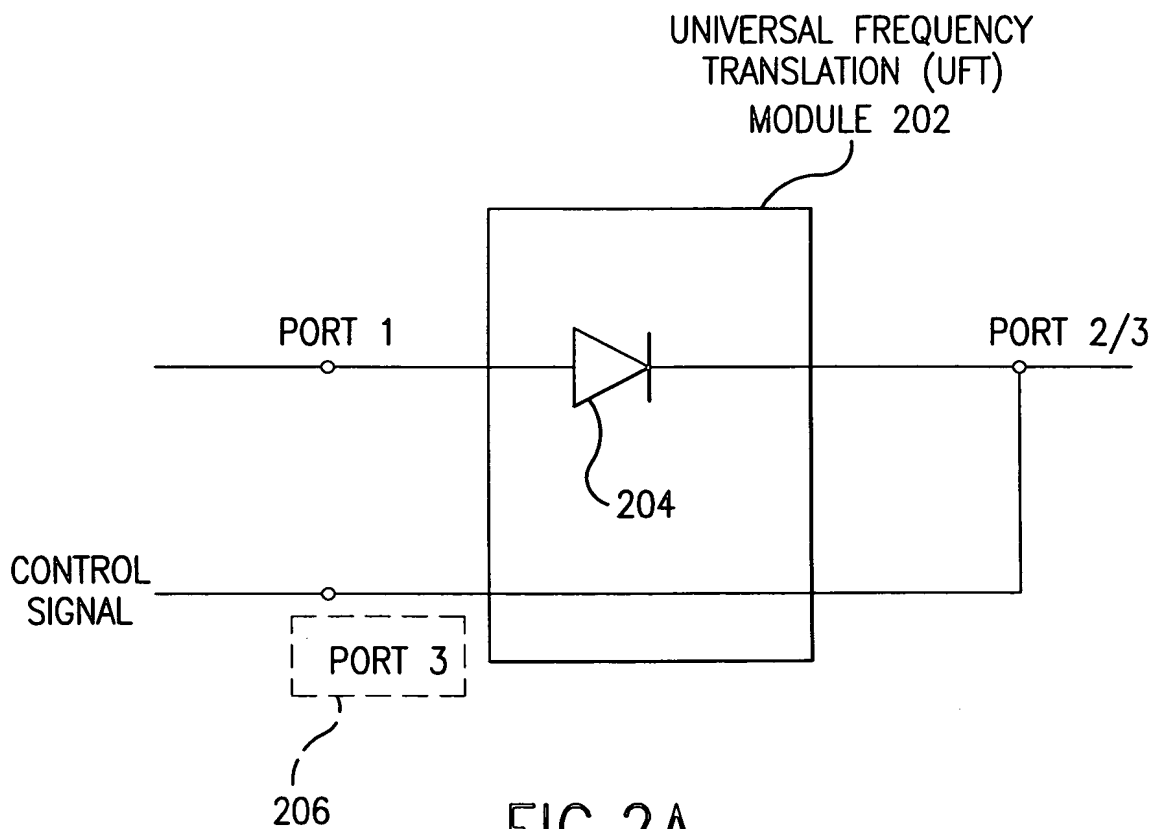


FIG.2A

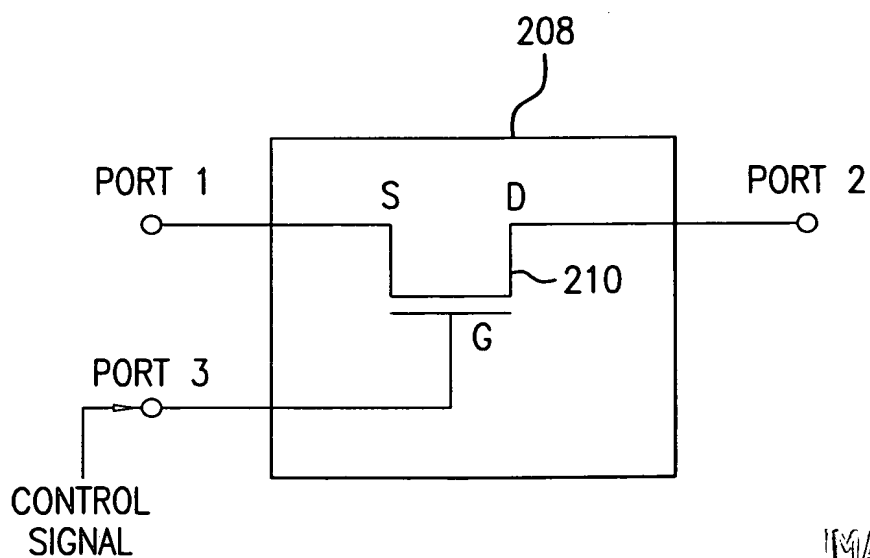


FIG.2B

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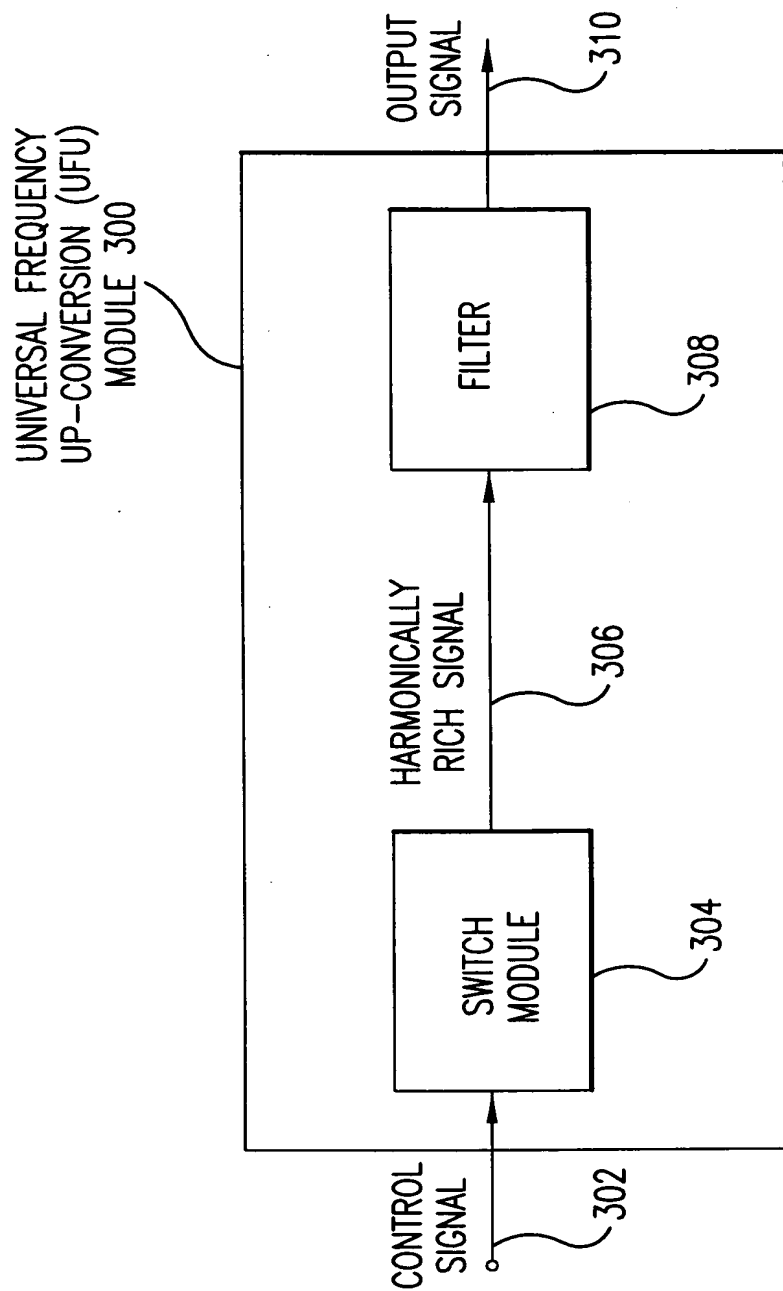


FIG. 3

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UNIVERSAL FREQUENCY
UP-CONVERSION (UFU)
MODULE 401

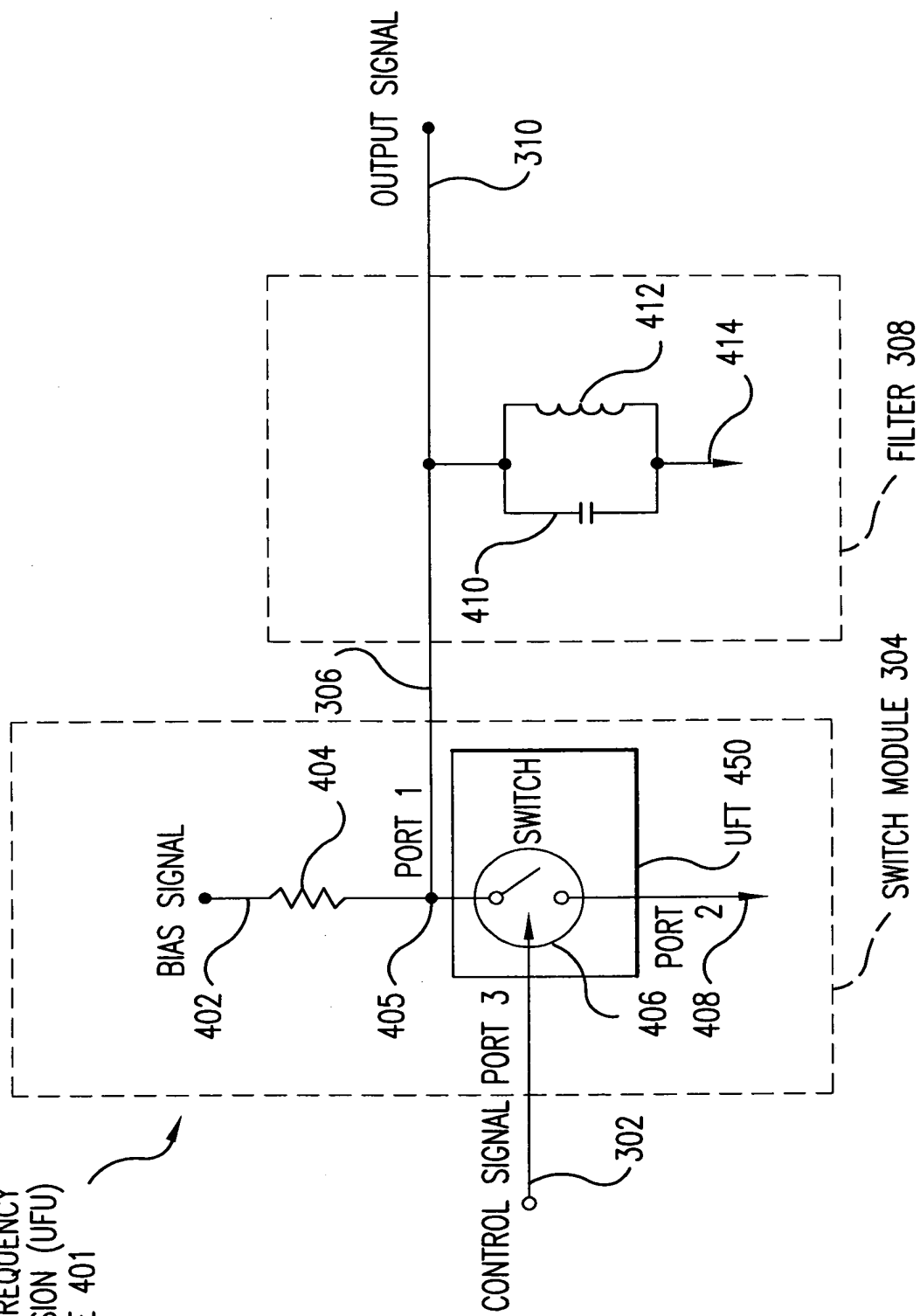


FIG. 4

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UNIVERSAL FREQUENCY
UP-CONVERSION
(UFU) MODULE 590

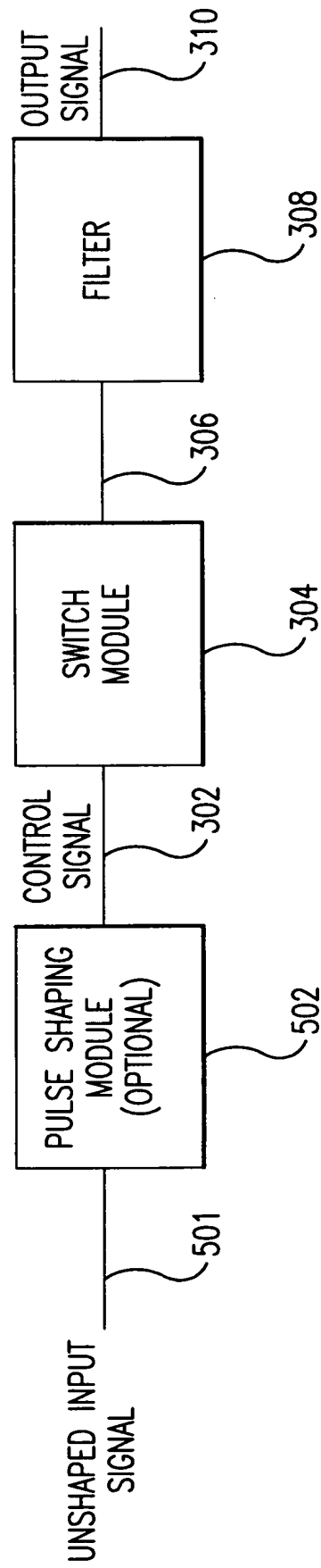
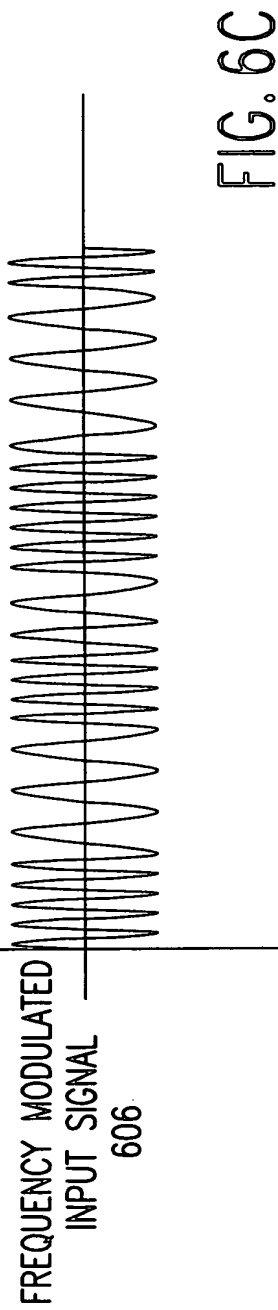
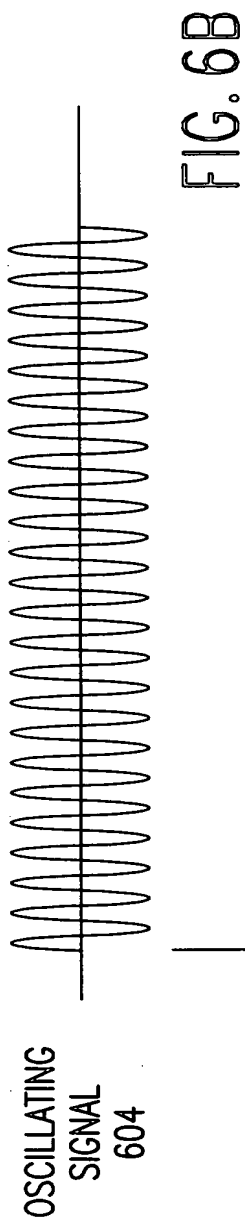
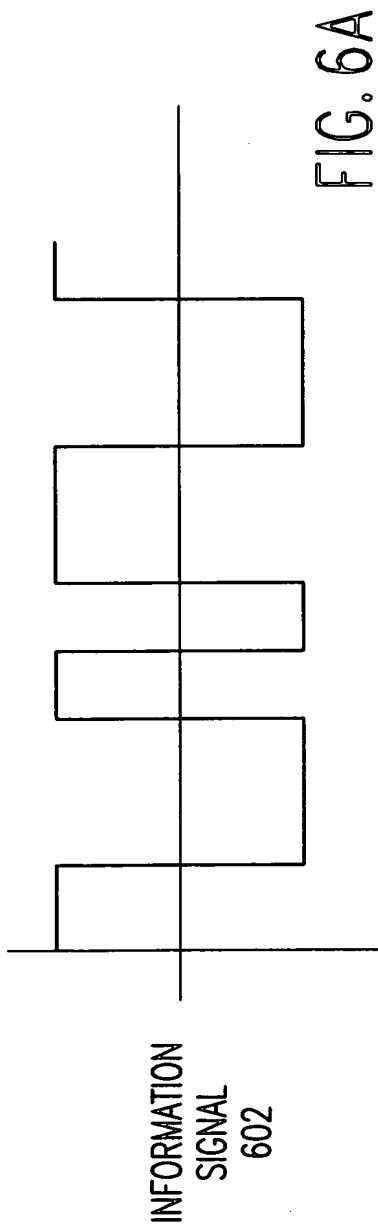


FIG. 5

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SEE FIG. 6E

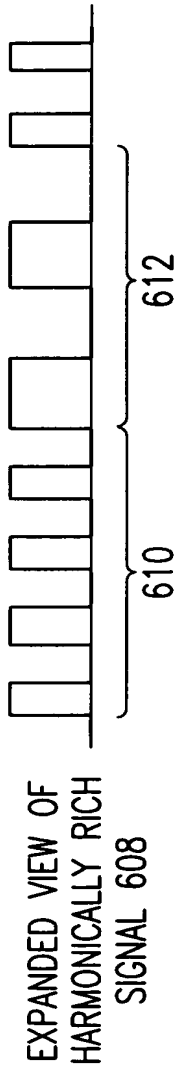


FIG. 6E

SEE FIG. 6F

SEE FIG. 6G

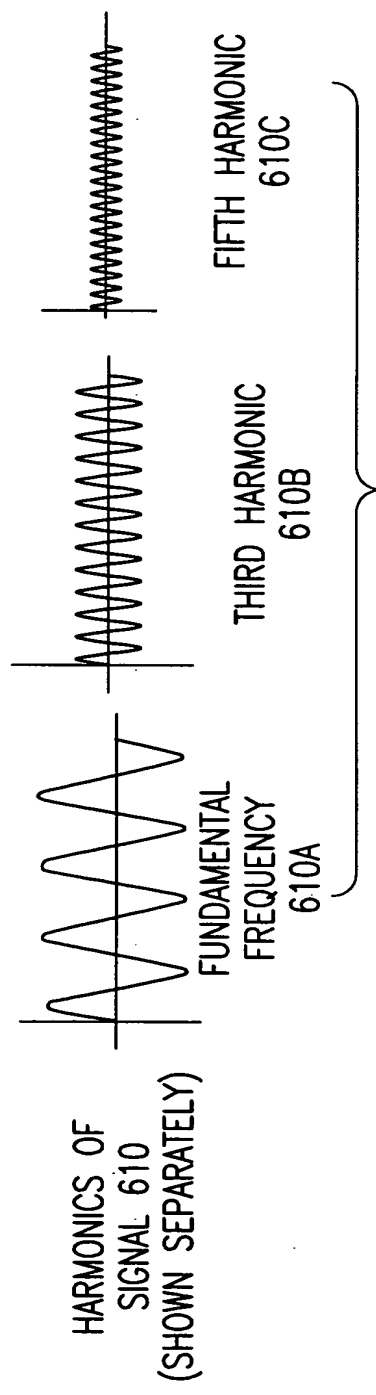


FIG. 6F

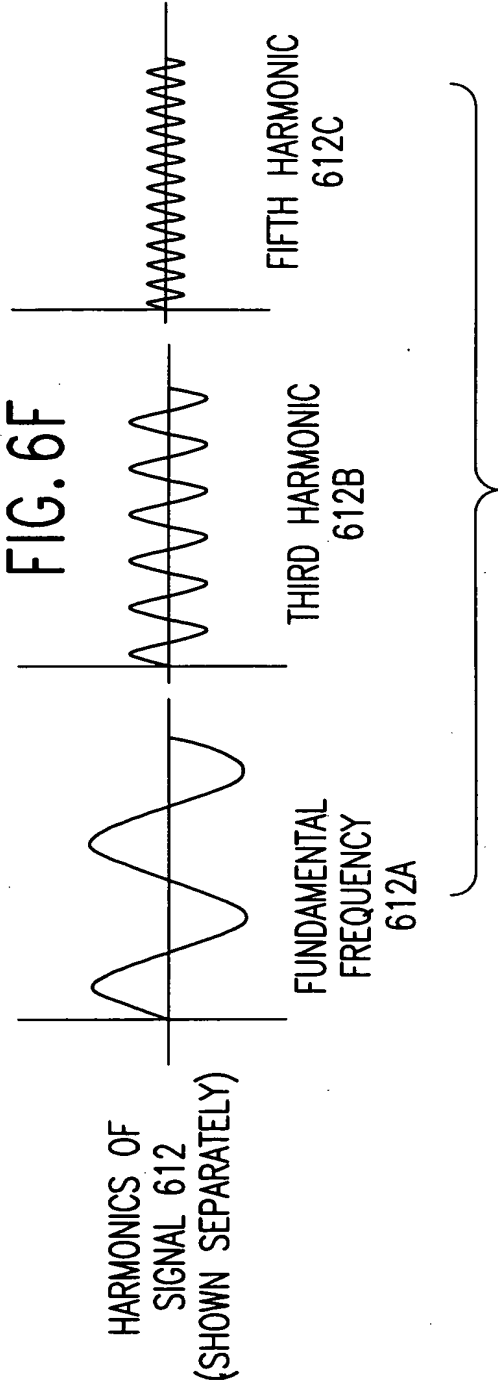


FIG. 6G

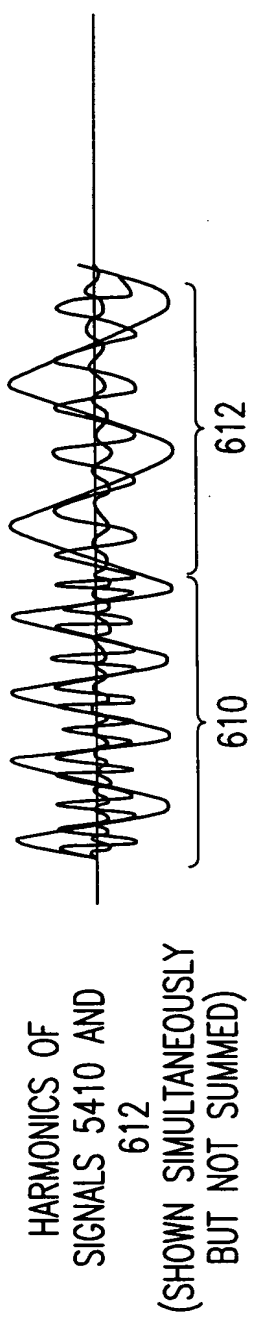


FIG. 6H

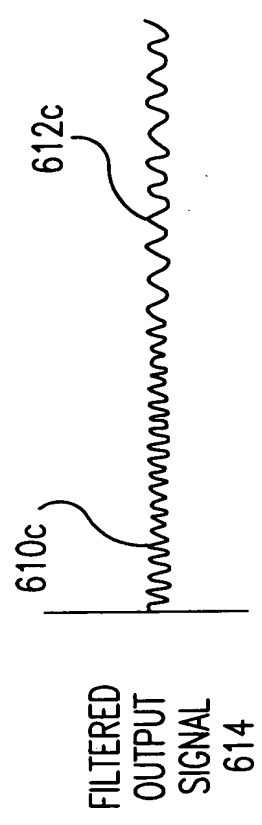


FIG. 6I

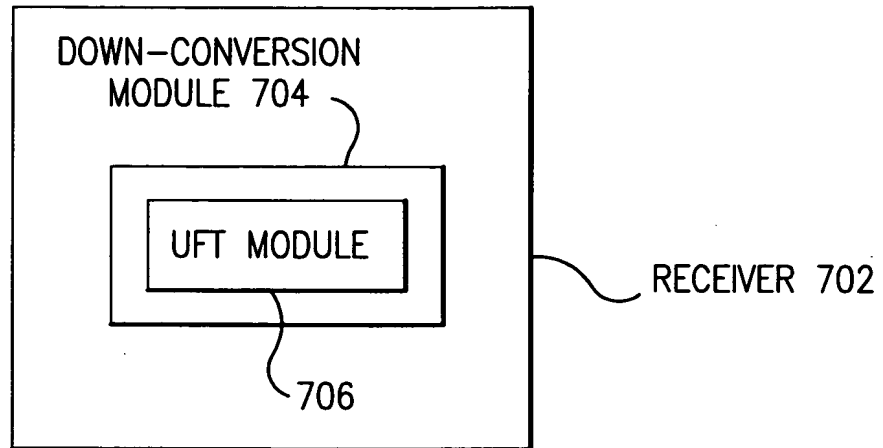


FIG. 7

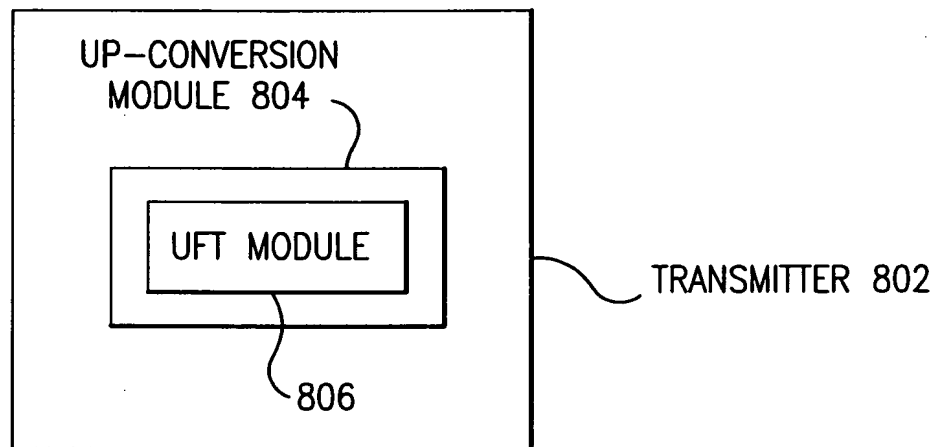


FIG. 8

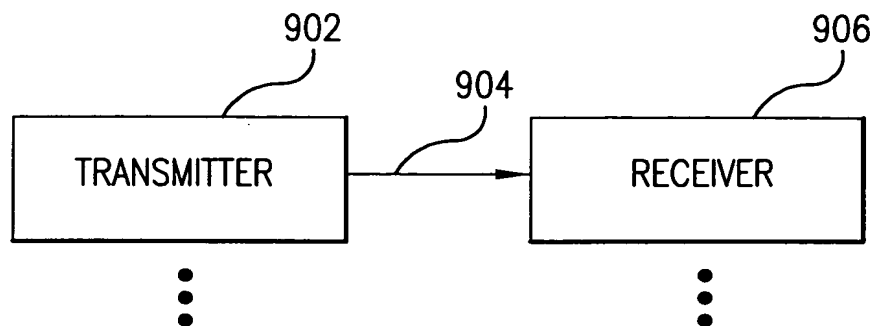


FIG. 9

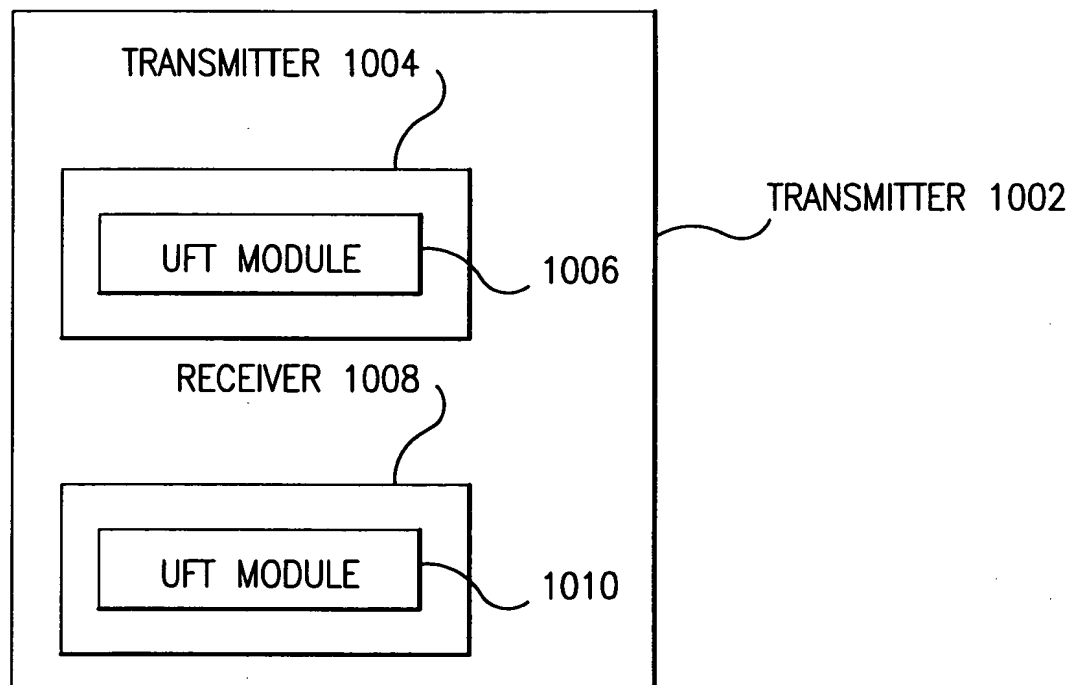


FIG. 10

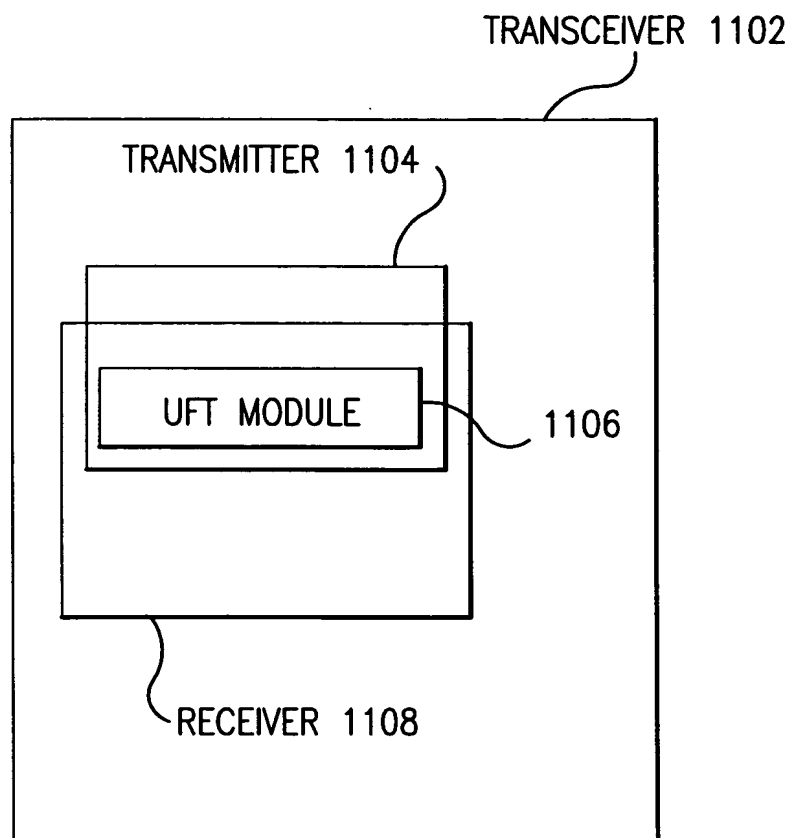


FIG. 11

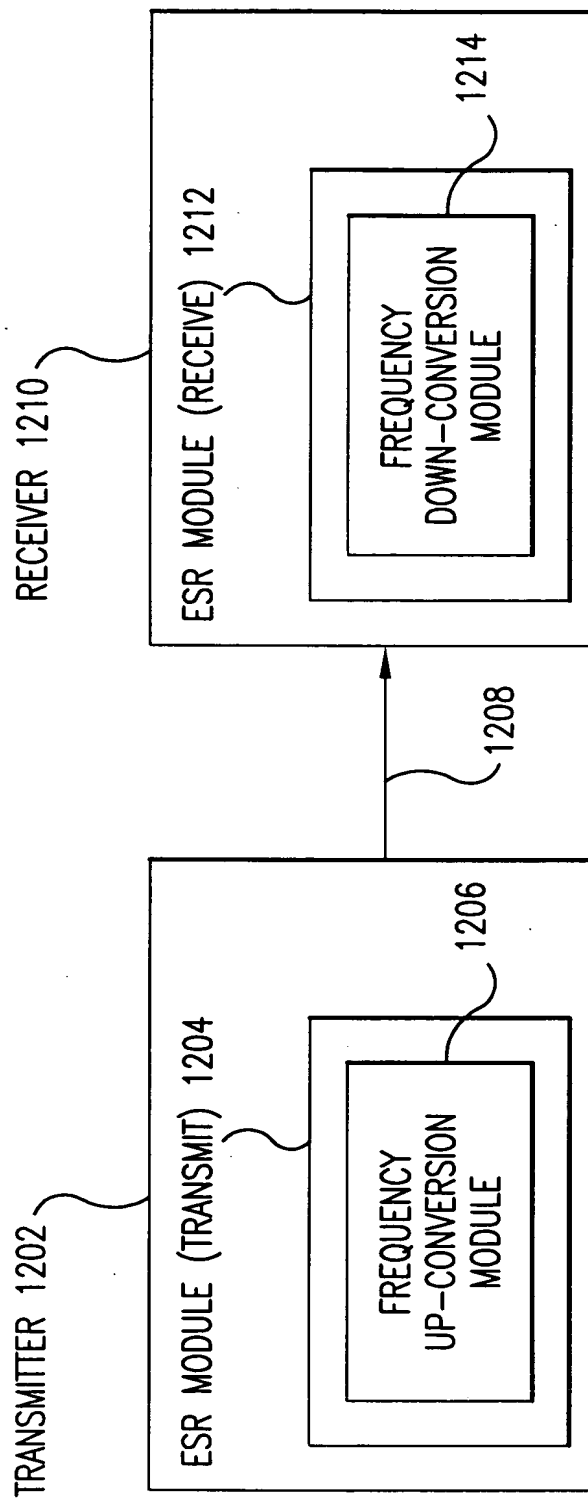


FIG. 12

UNIFIED DOWN-CONVERTING
AND FILTERING (UDF) MODULE 1302

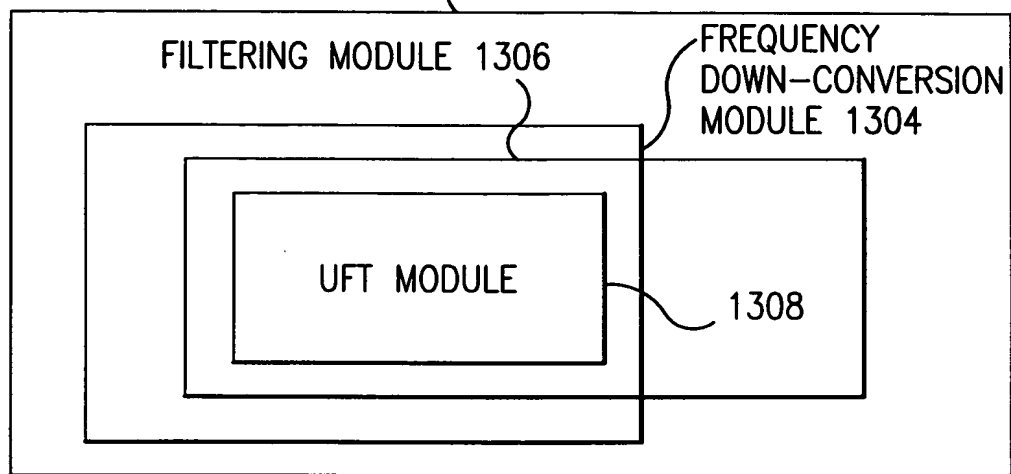


FIG. 13

RECEIVER 1402

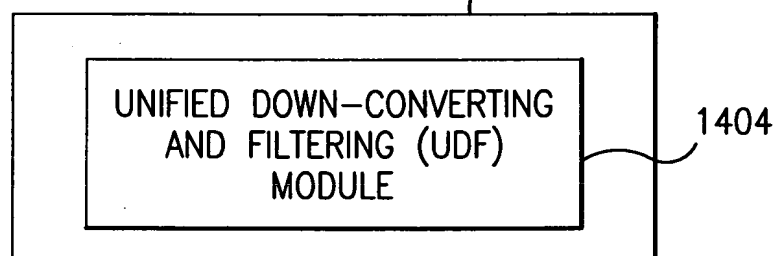


FIG. 14

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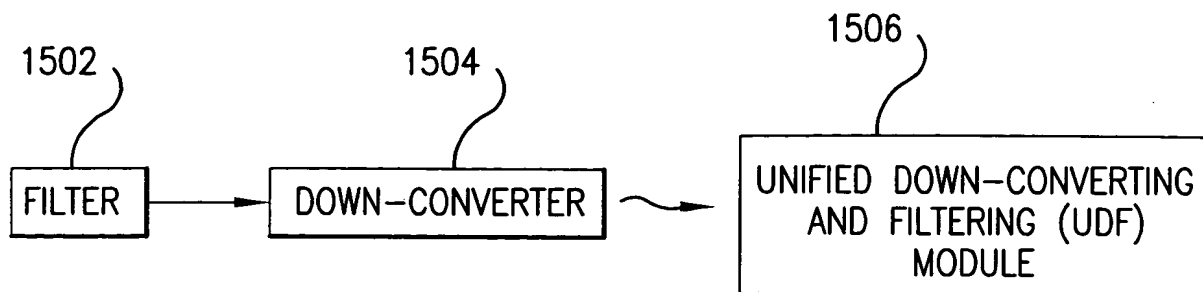


FIG. 15A

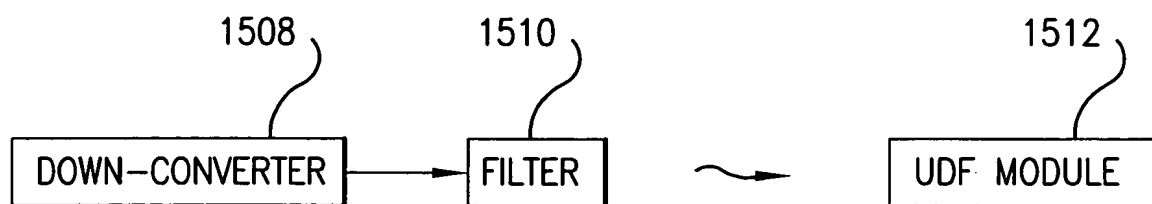


FIG. 15B

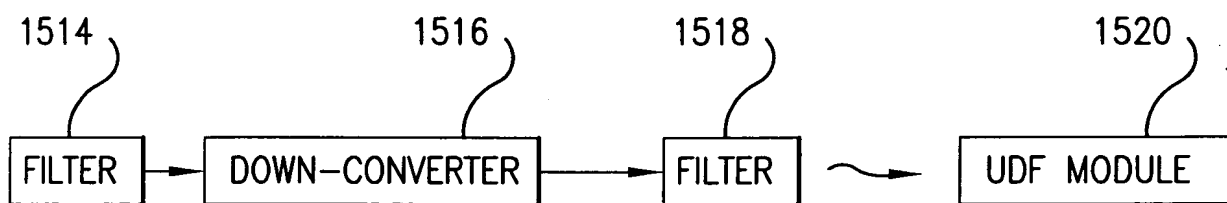


FIG. 15C

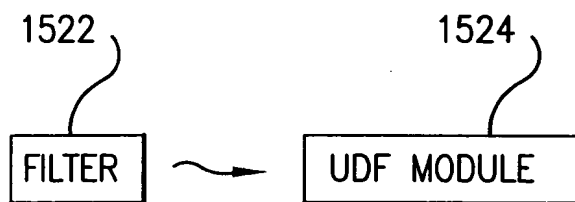


FIG. 15D

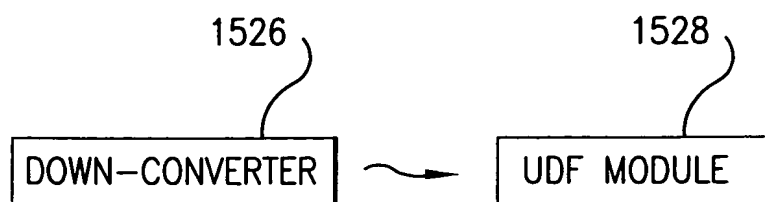


FIG. 15E

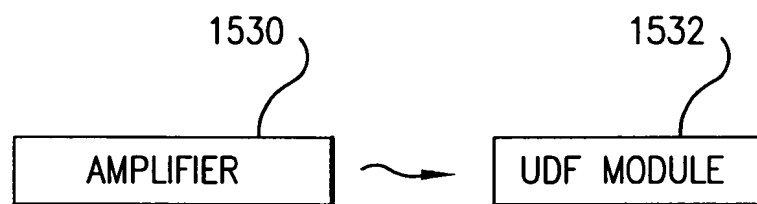


FIG. 15F

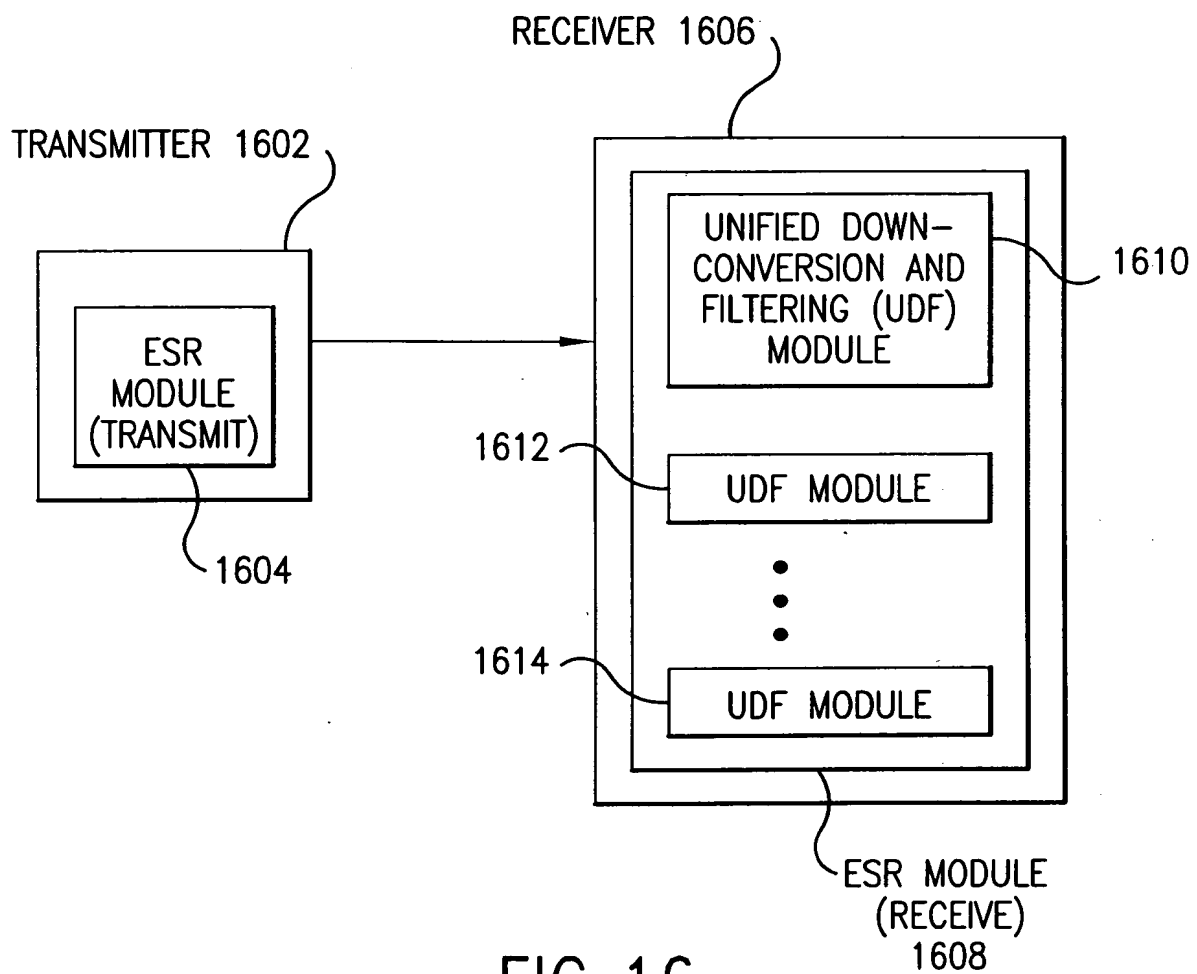


FIG. 16

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Patented 2000

UNIFIED DOWNCONVERTING AND
FILTERING (UDF) MODULE 1702

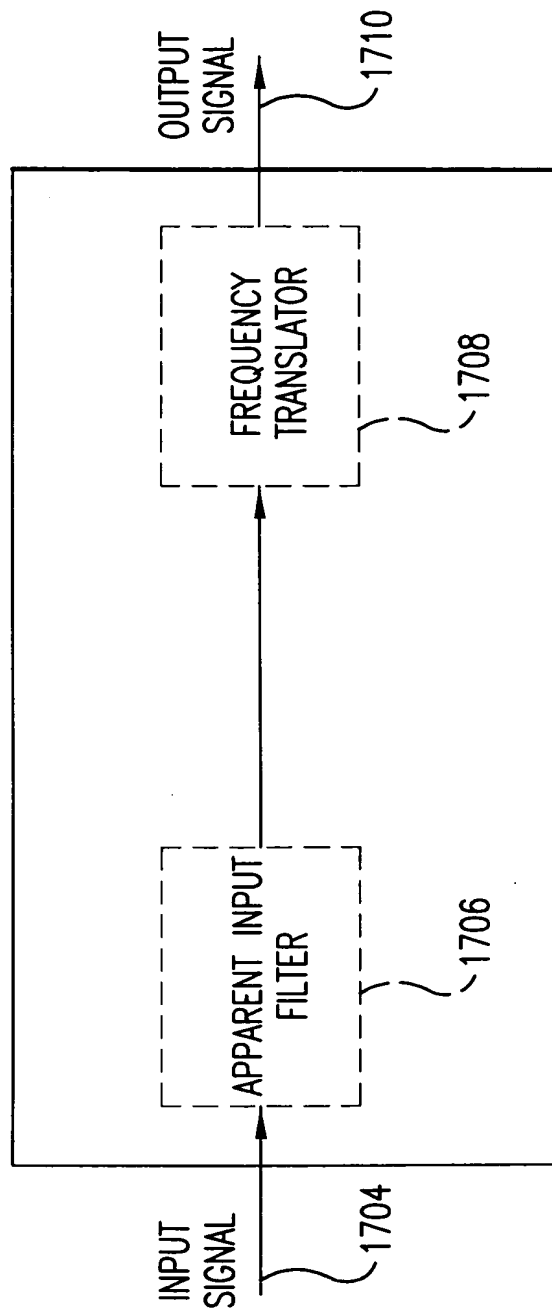


FIG. 17

TIME NODE	t-1 (RISING EDGE OF ϕ_1)	t-1 (RISING EDGE OF ϕ_2)	t (RISING EDGE OF ϕ_1)	t (RISING EDGE OF ϕ_2)	t+1 (RISING EDGE OF ϕ_1)
1902	$V_{I,t-1}$ 1804	$V_{I,t-1}$ 1808	$V_{I,t}$ 1816	$V_{I,t}$ 1826	$V_{I,t+1}$ 1838
1904	—	$V_{I,t-1}$ 1810	$V_{I,t-1}$ 1818	$V_{I,t}$ 1828	$V_{I,t}$ 1840
1906	$V_{O,t-1}$ 1806	$V_{O,t-1}$ 1812	$V_{O,t}$ 1820	$V_{O,t}$ 1830	$V_{O,t+1}$ 1842
1908	—	$V_{O,t-1}$ 1814	$V_{O,t-1}$ 1822	$V_{O,t}$ 1832	$V_{O,t}$ 1844
1910	— 1807	—	$V_{O,t-1}$ 1824	$V_{O,t-1}$ 1834	$V_{O,t}$ 1846
1912	—	— 1815	—	$V_{O,t-1}$ 1836	$V_{O,t-1}$ 1848
1918	—	—	—	—	$V_{I,t} - 0.1 * V_{O,t} - 0.8 * V_{O,t-1}$ 1850

FIG. 18

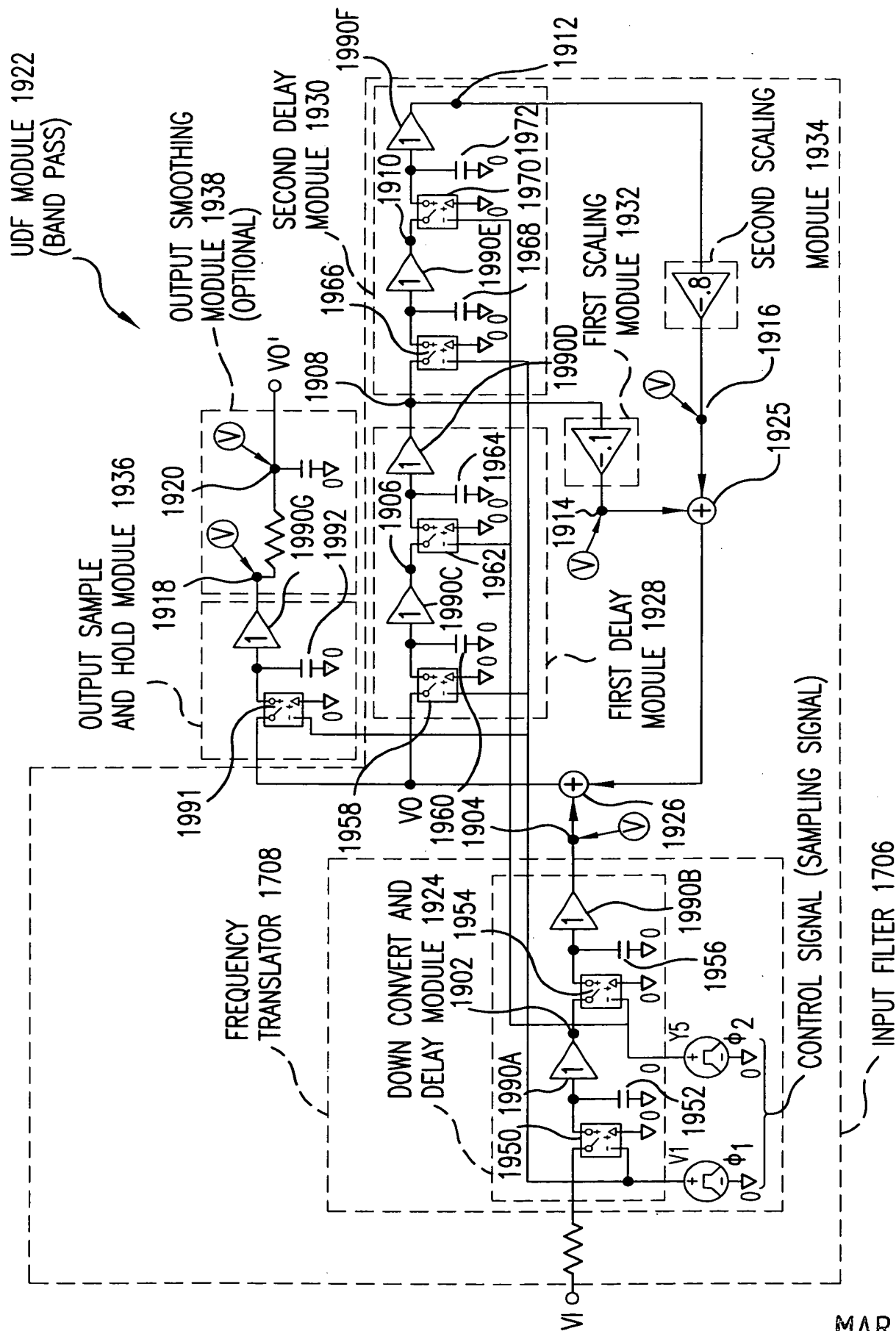


FIG. 19

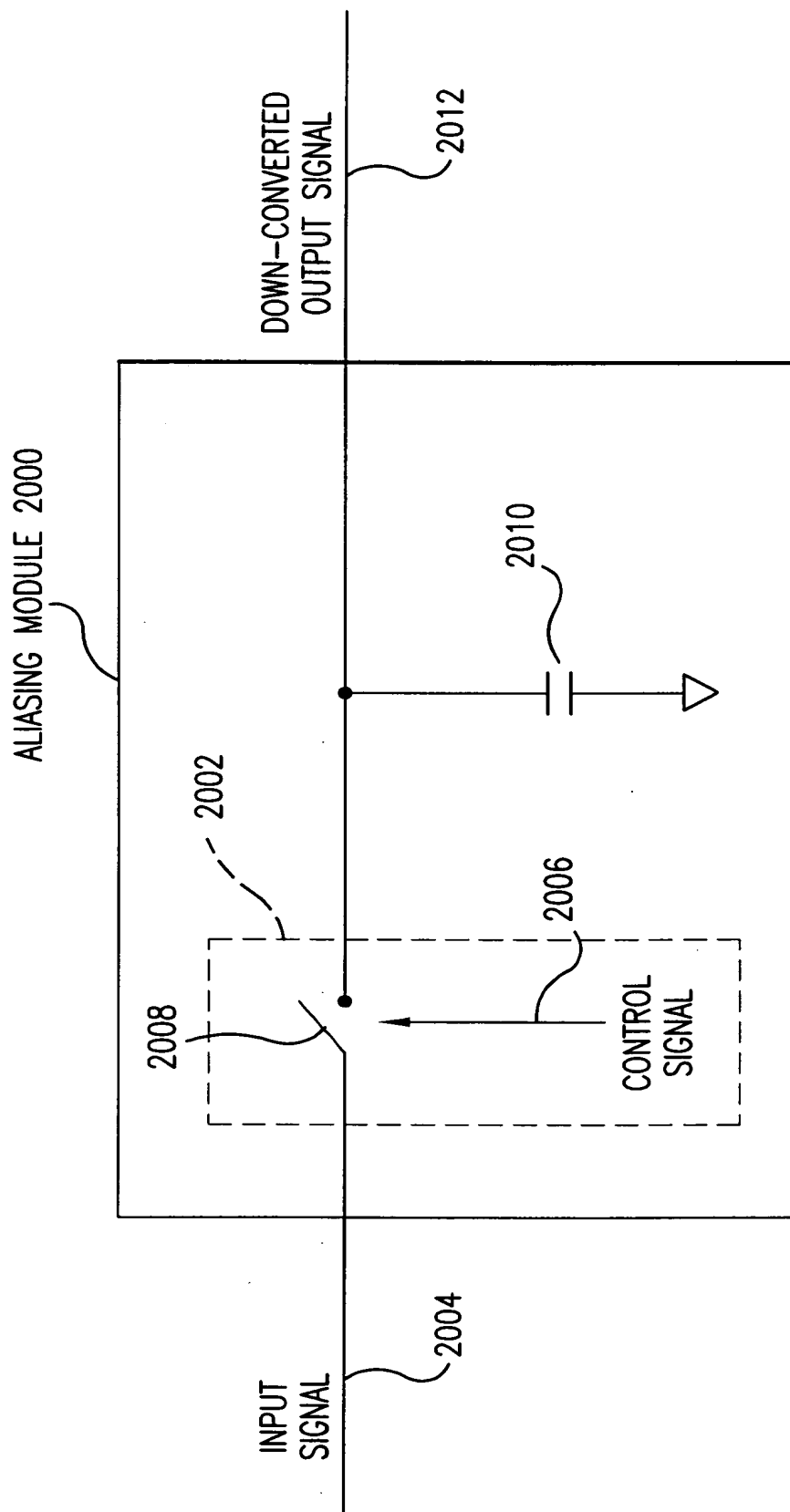


FIG. 20A

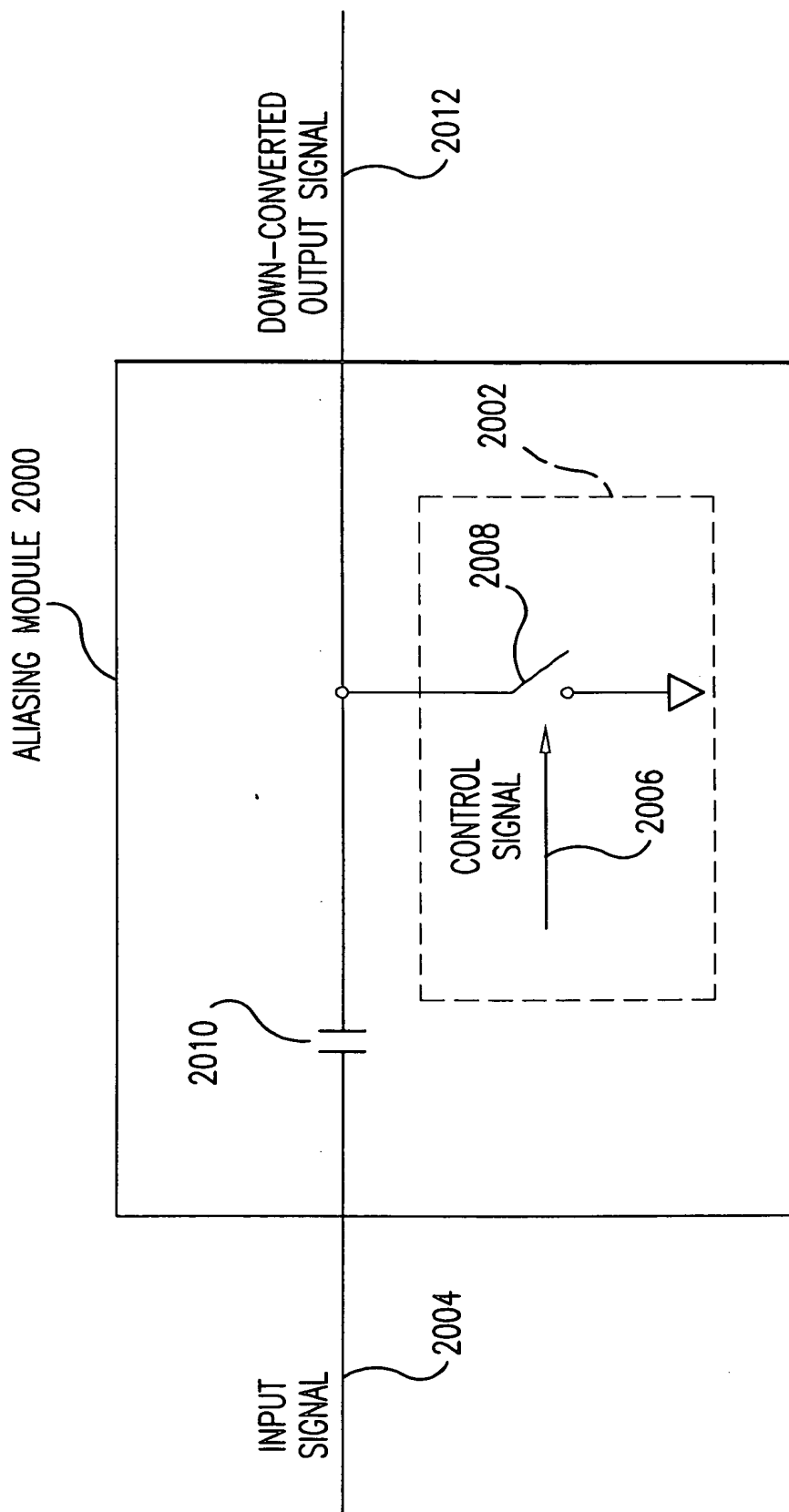


FIG. 20A-1

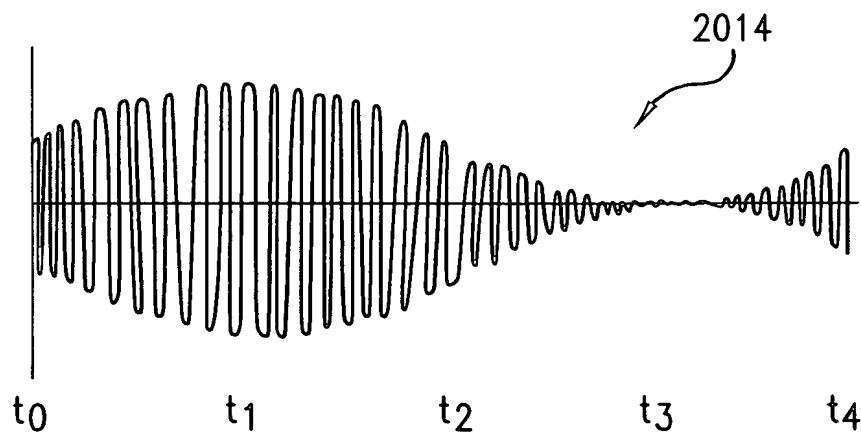


FIG. 20B

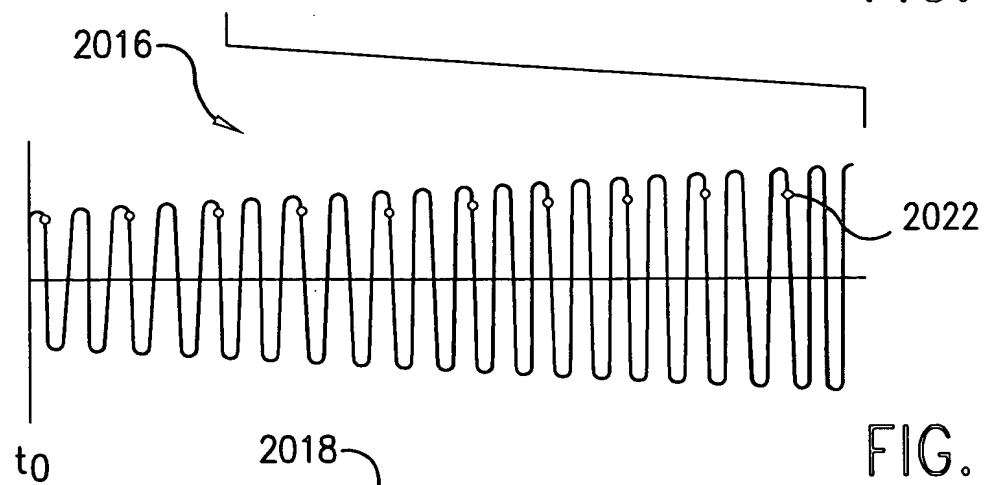


FIG. 20C

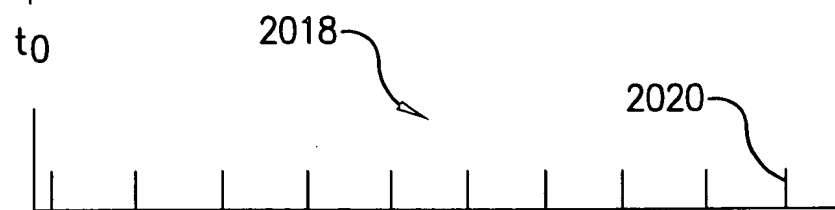


FIG. 20D

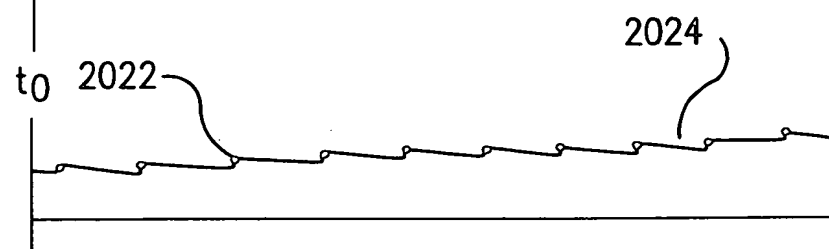


FIG. 20E

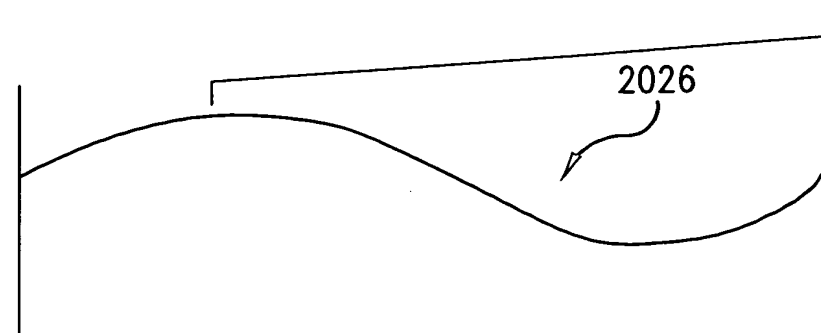


FIG. 20F

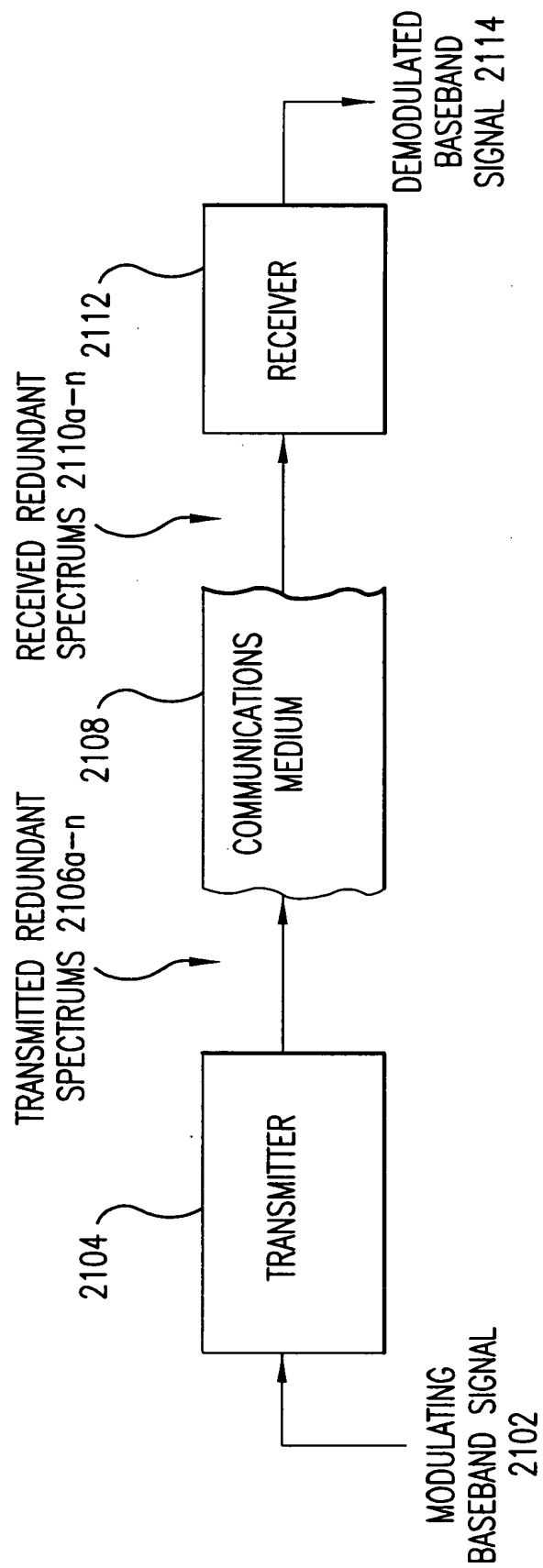


FIG. 21



FIG. 22A

FIG. 22B

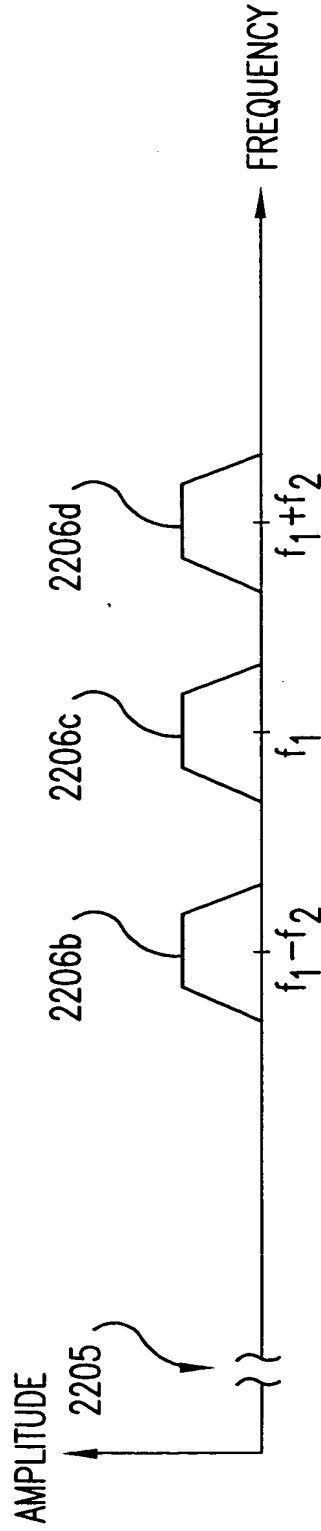


FIG. 22C

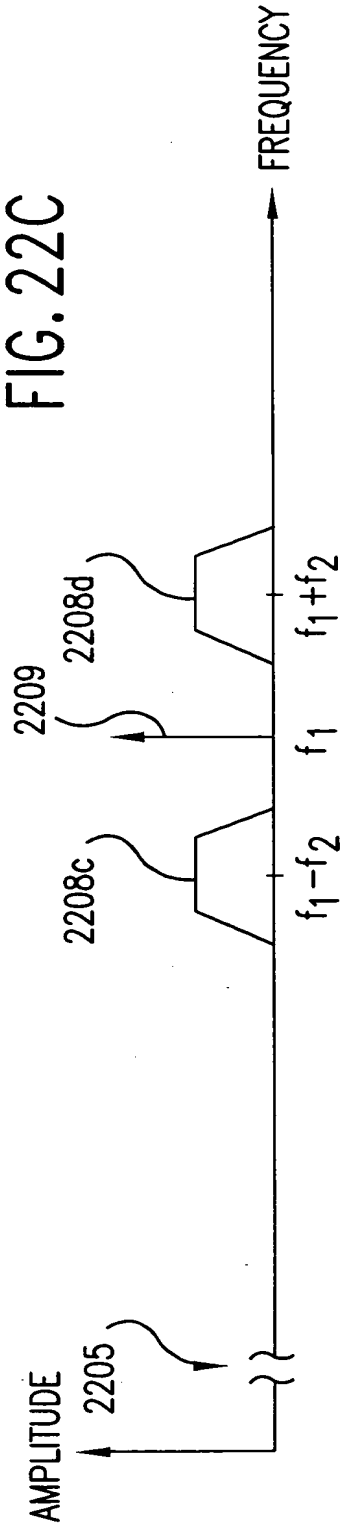


FIG. 22D

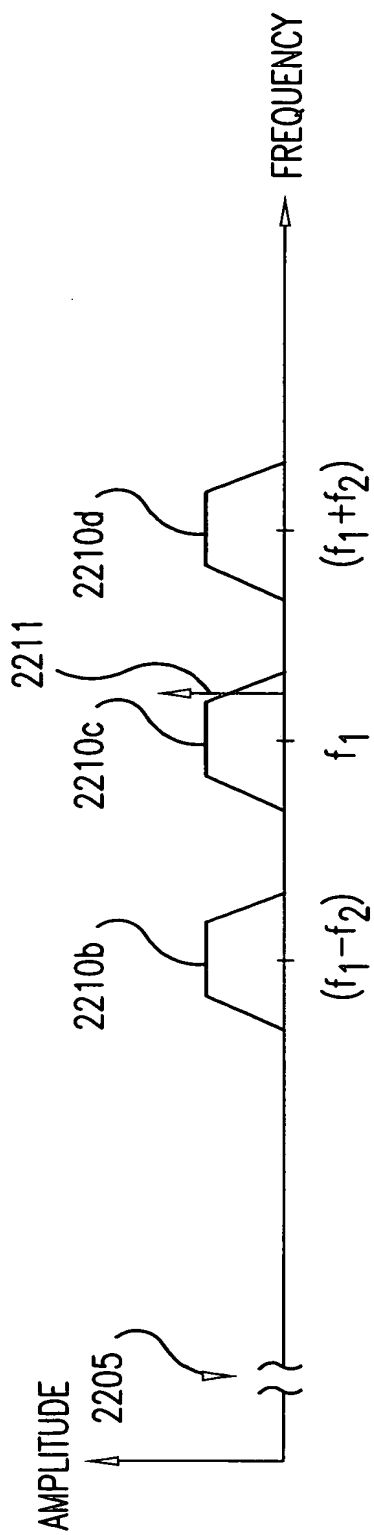


FIG. 22E

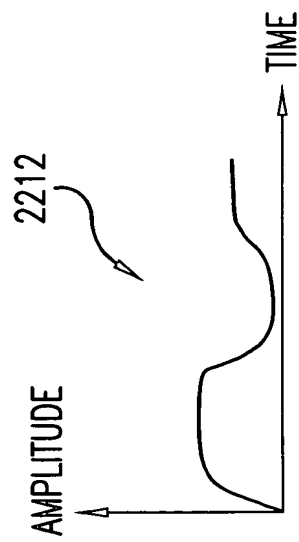


FIG. 22F

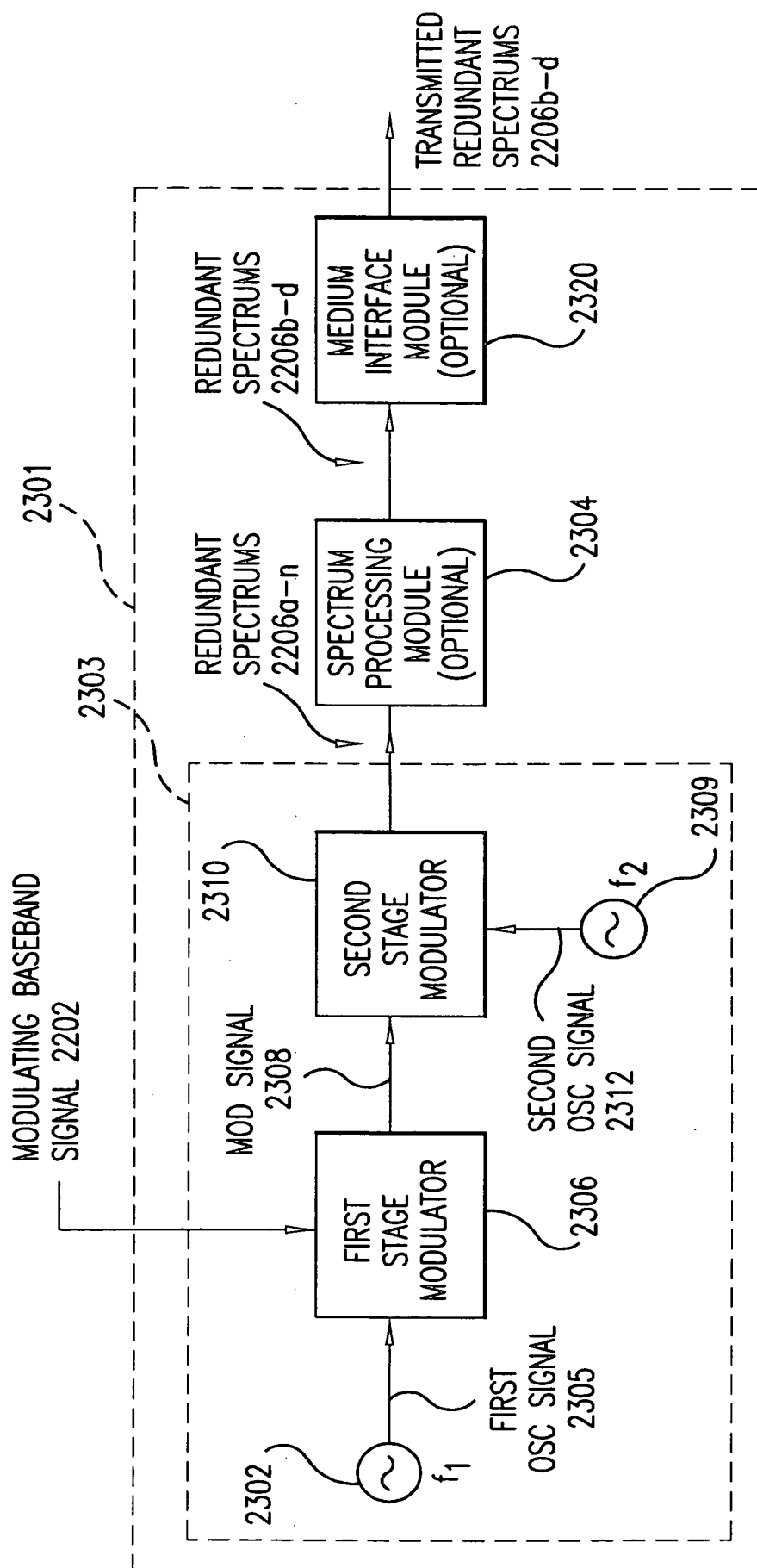


FIG. 23A

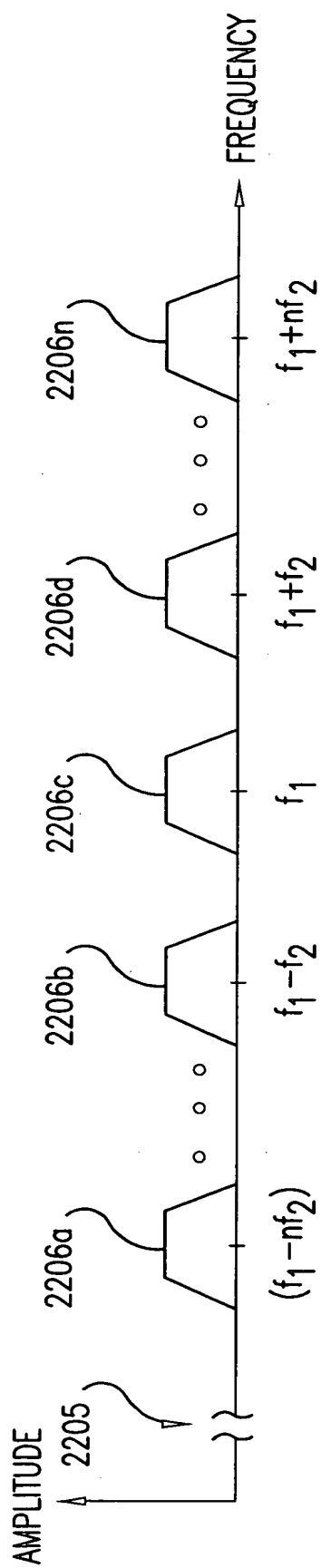


FIG. 23B

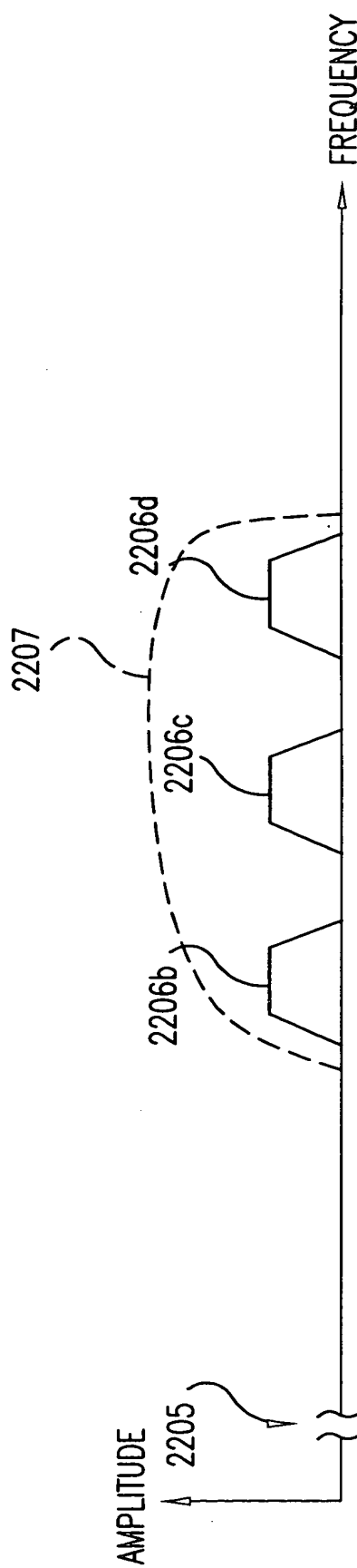


FIG. 23C

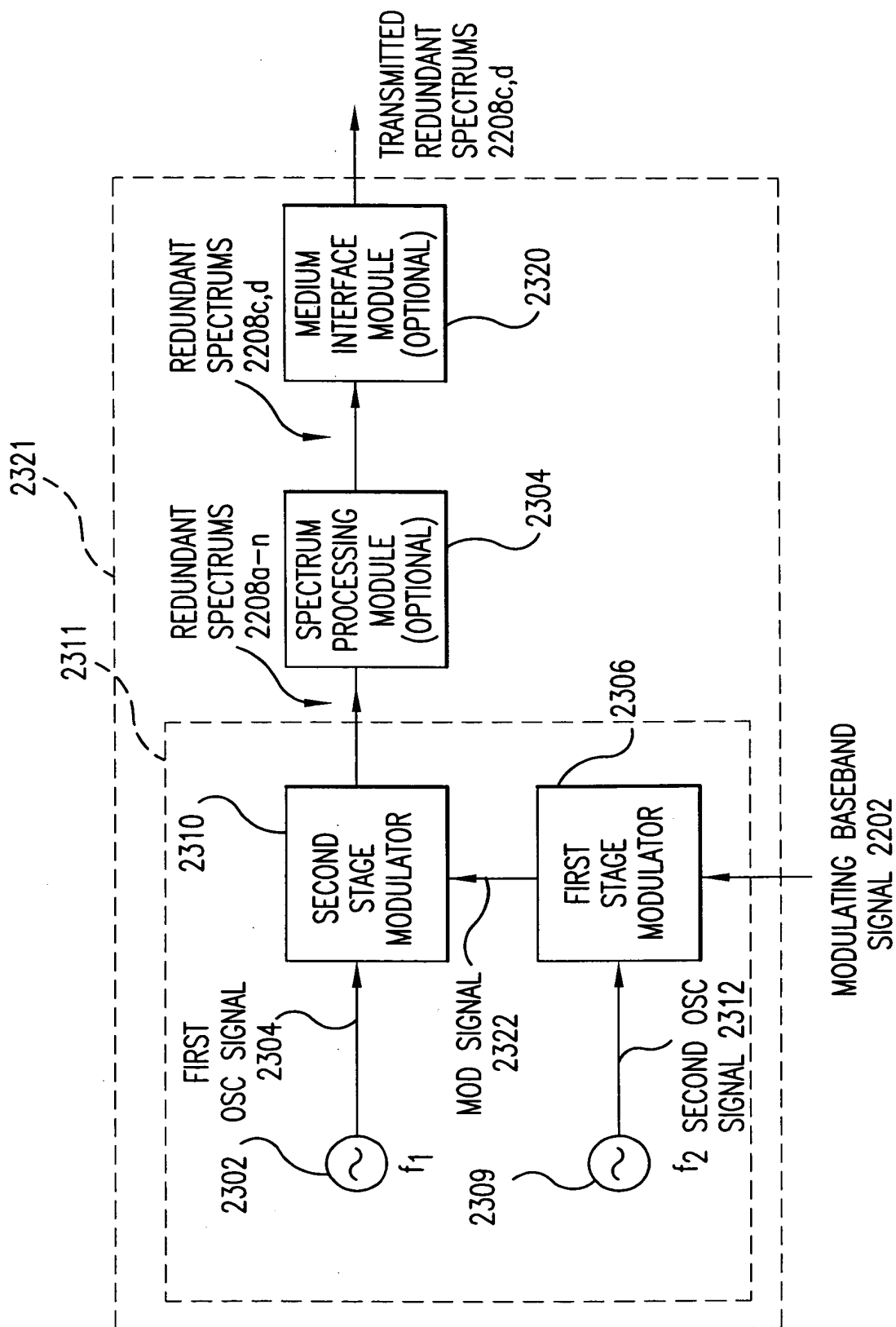


FIG. 23D

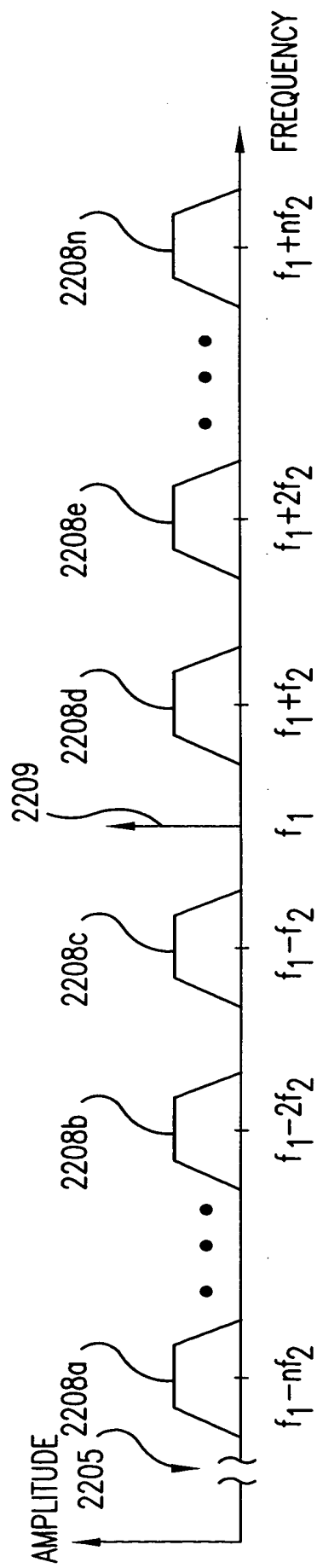


FIG. 23E

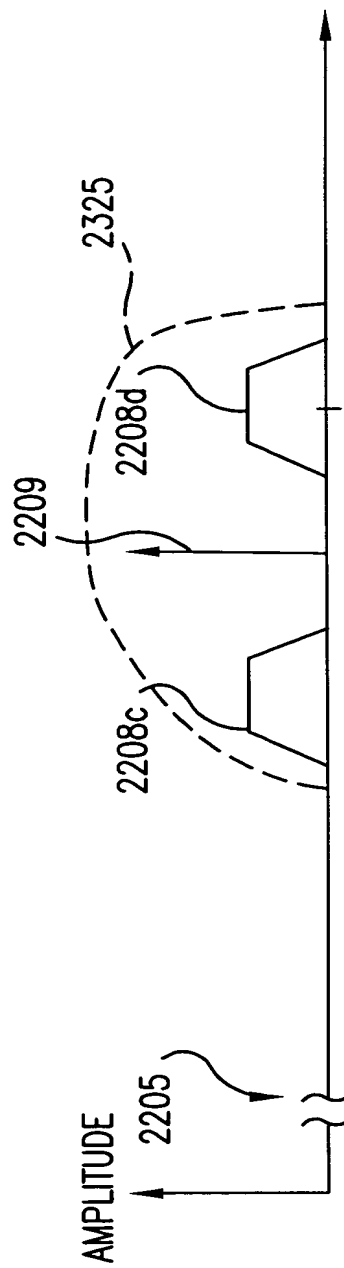


FIG. 23F

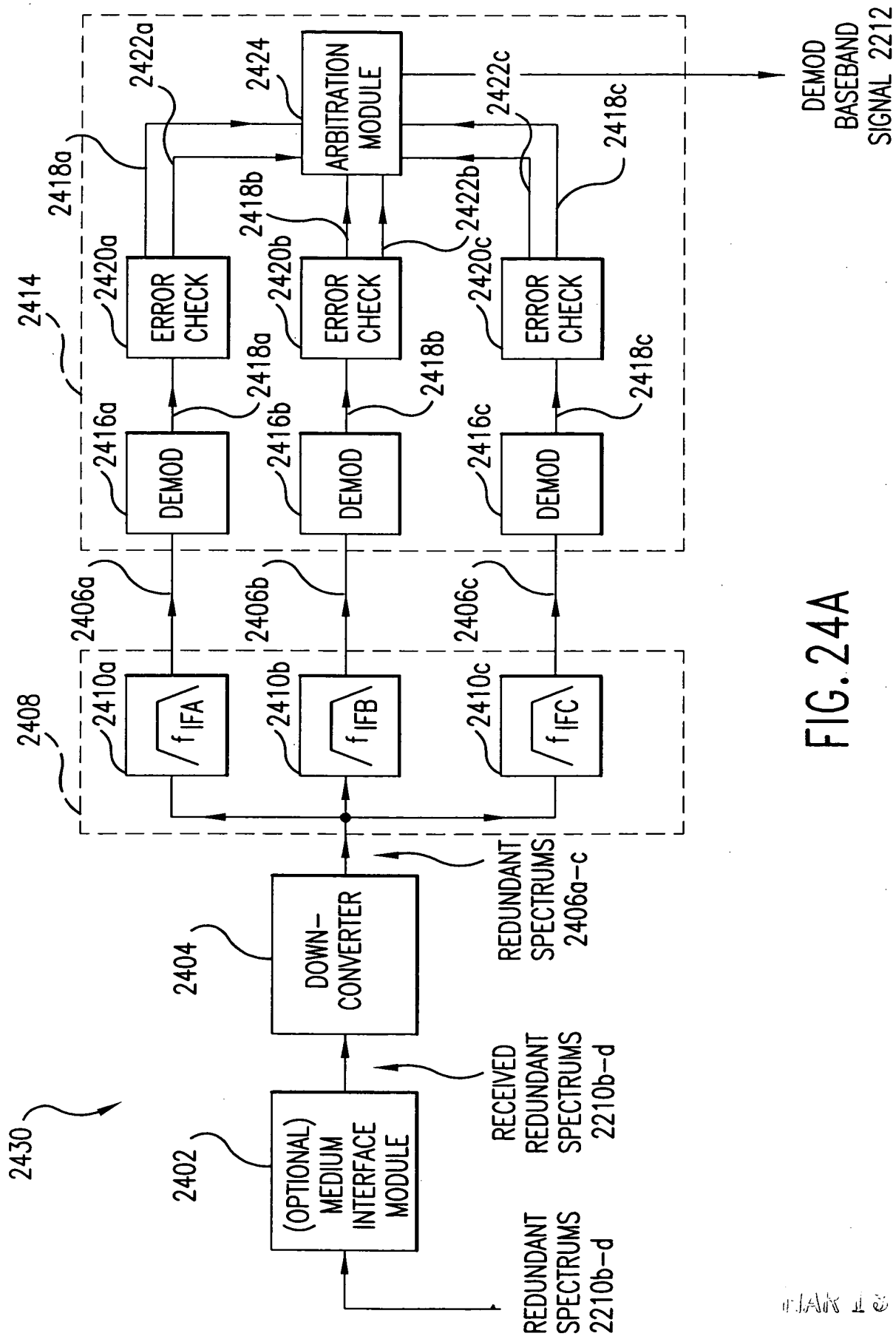


FIG. 24A

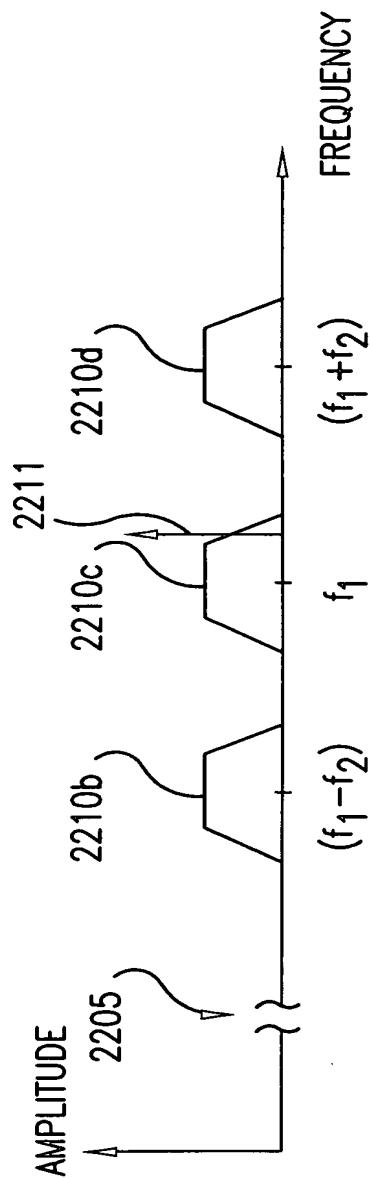


FIG. 24B

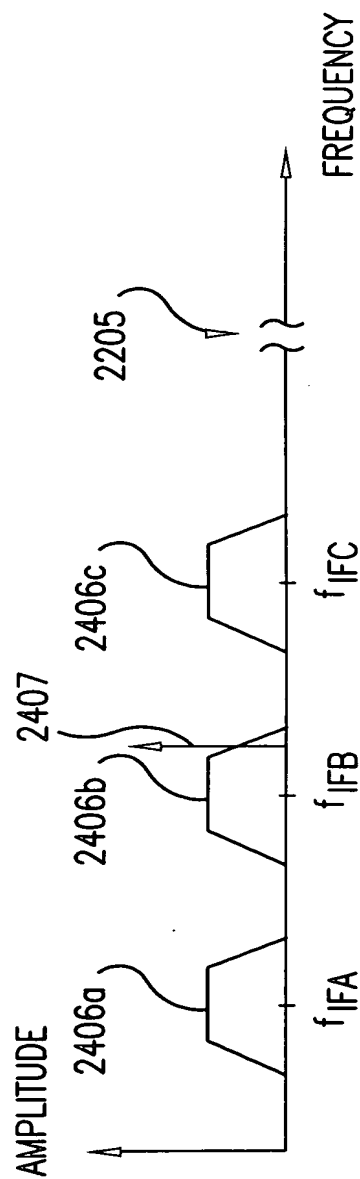


FIG. 24C

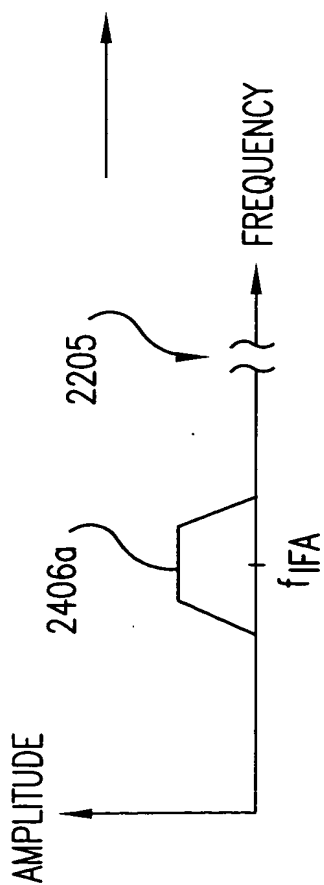


FIG. 24D

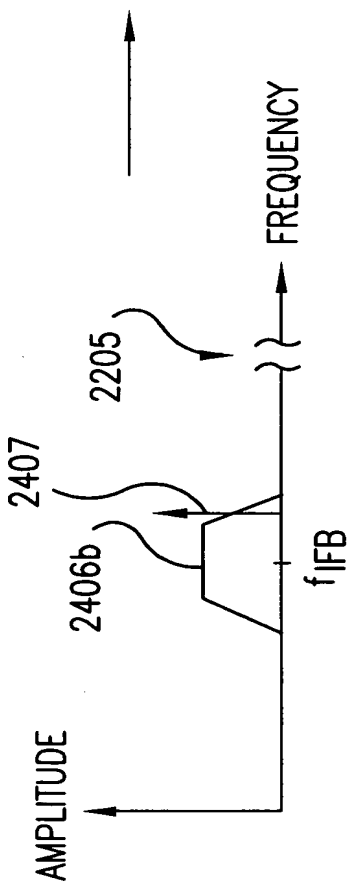


FIG. 24E

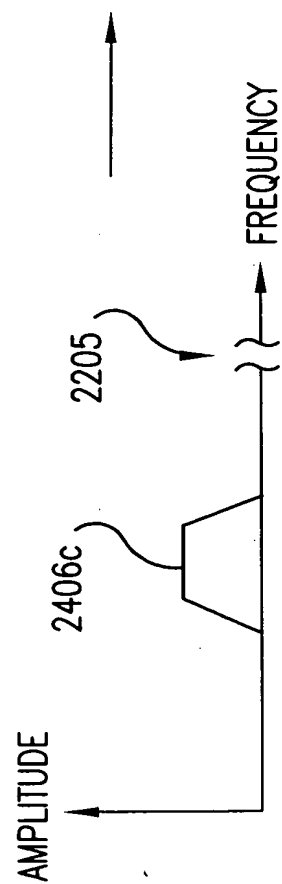


FIG. 24F

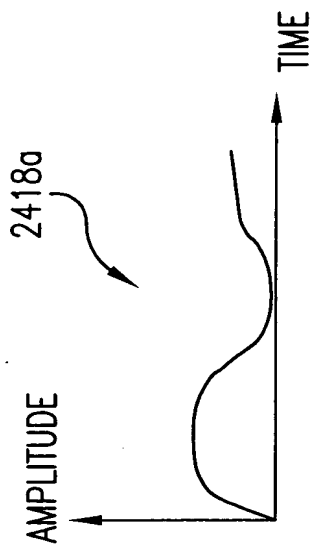


FIG. 24G

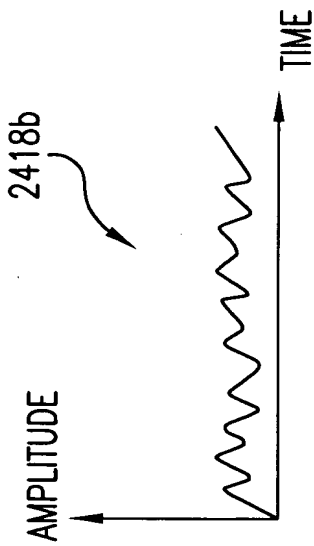


FIG. 24H

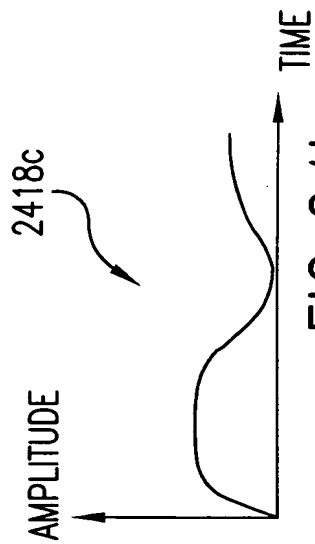


FIG. 24I

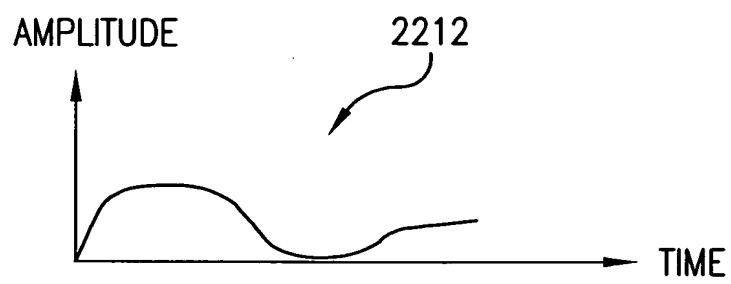


FIG. 24J

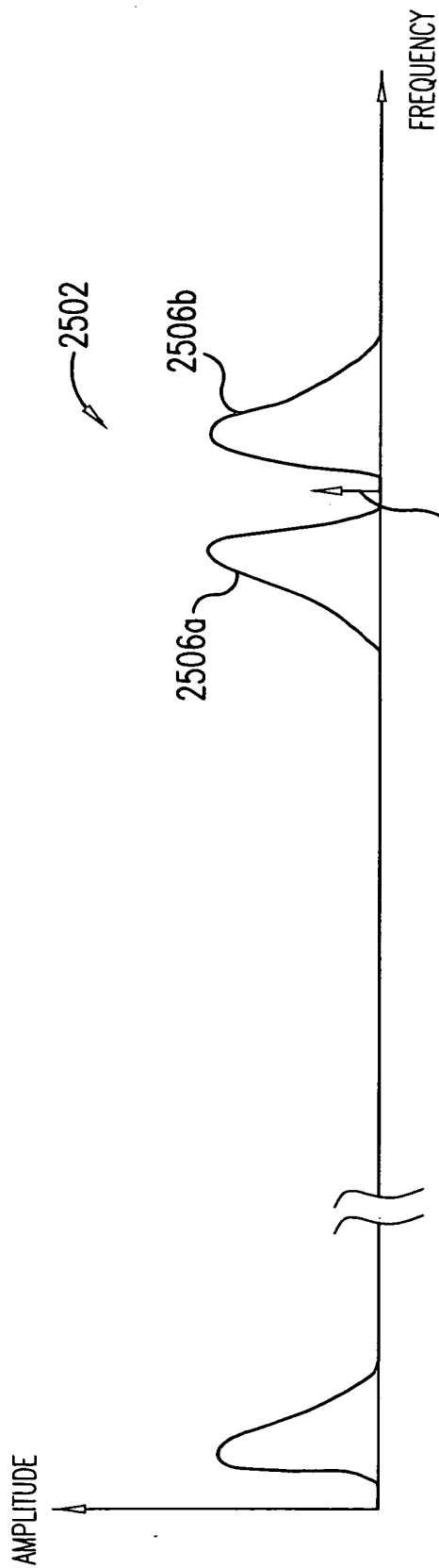


FIG. 25A

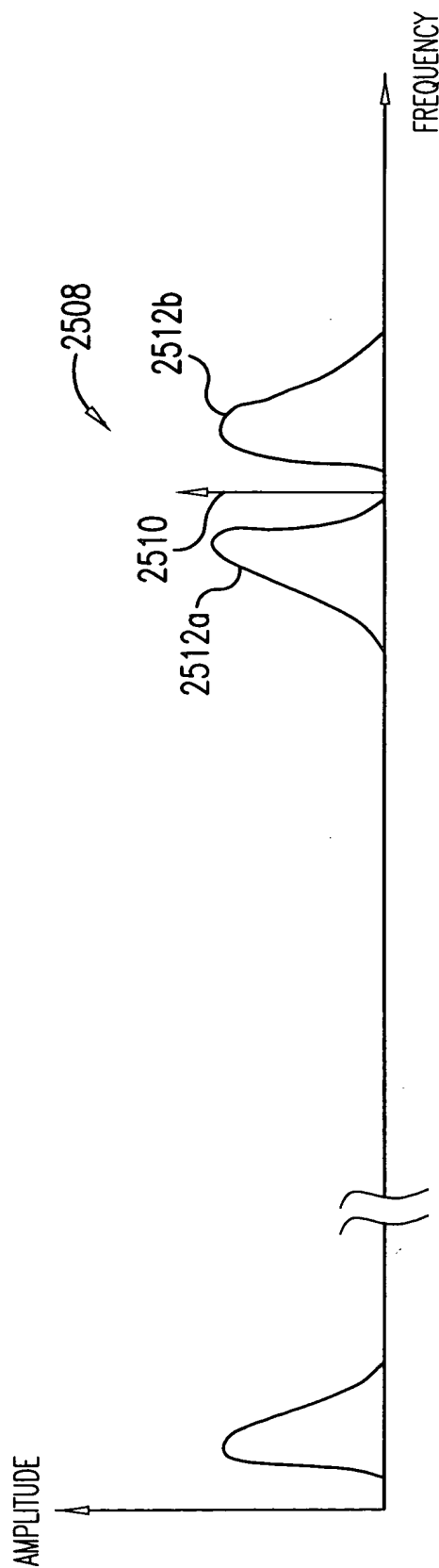


FIG. 25B

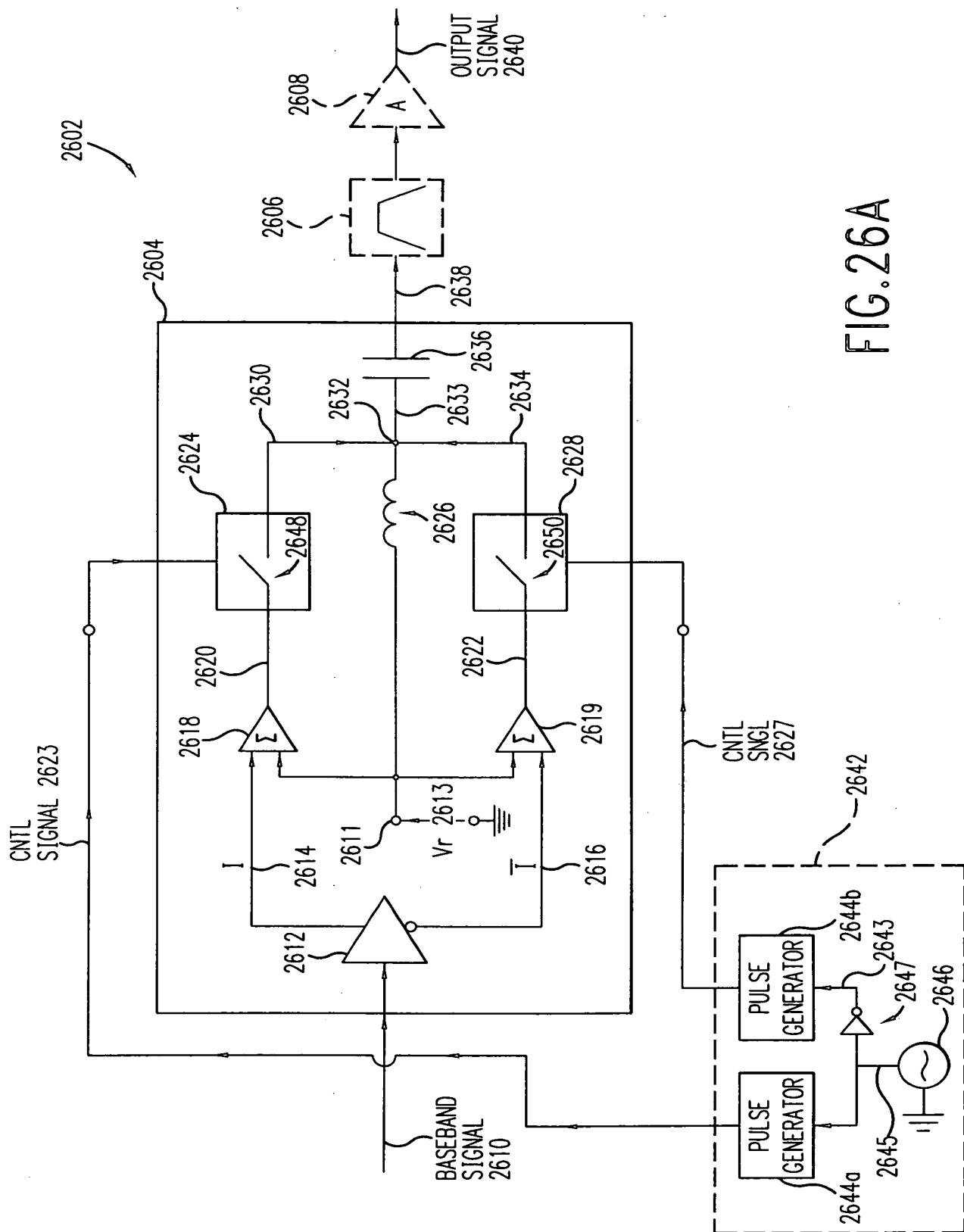


FIG. 26A

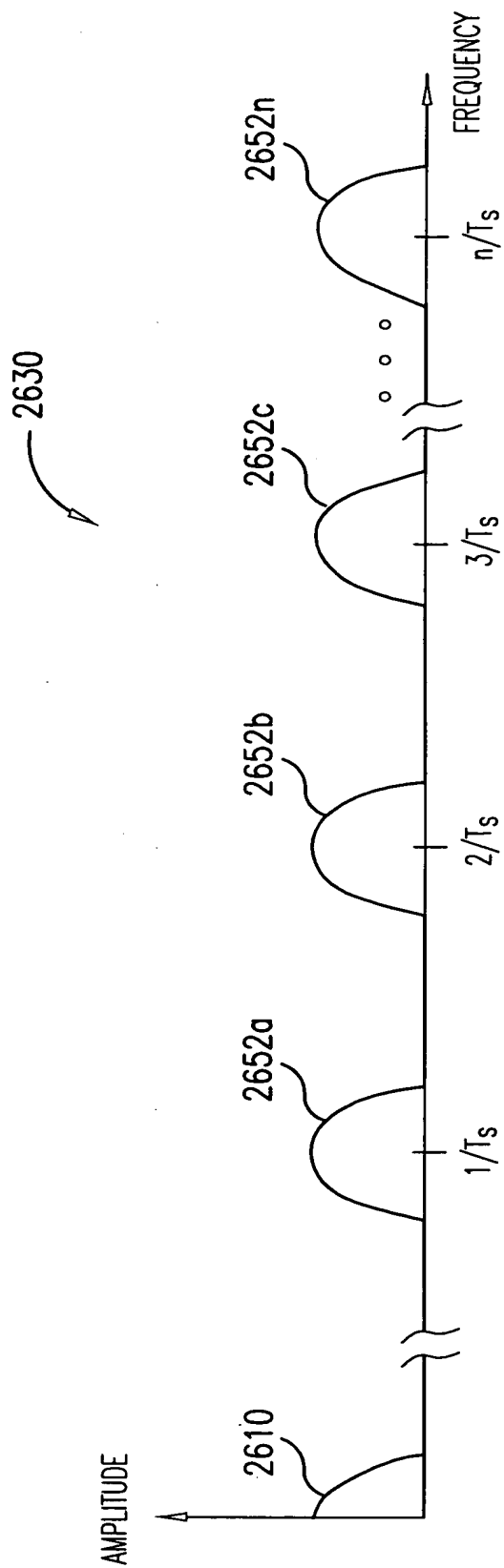


FIG. 26B

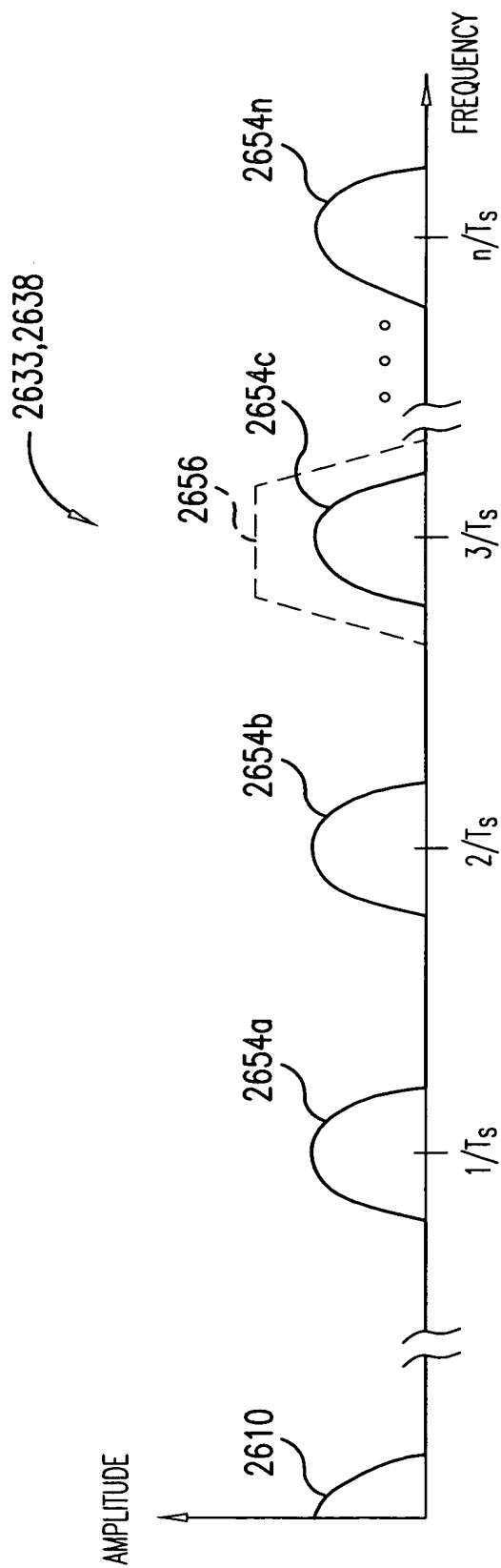


FIG. 26C

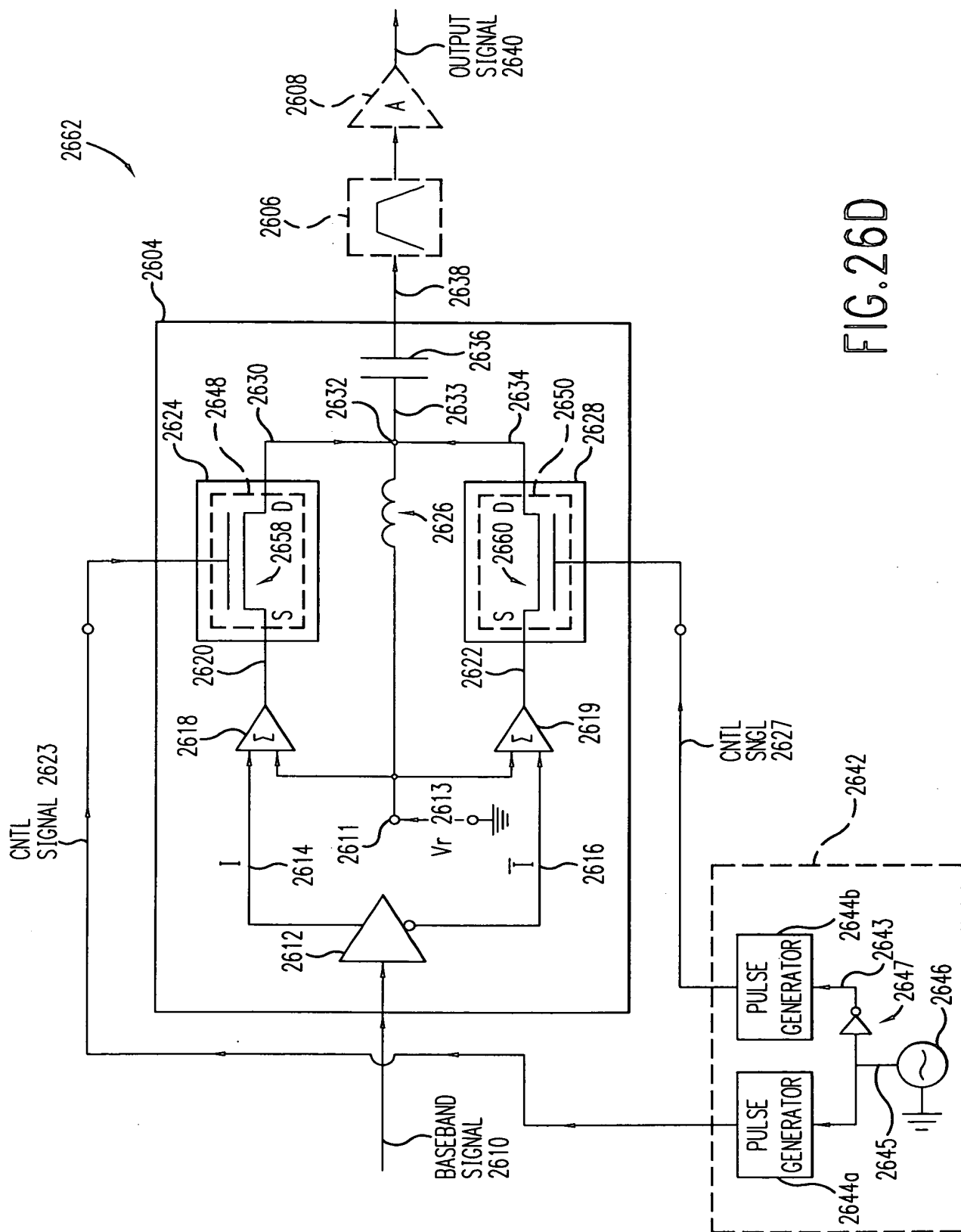
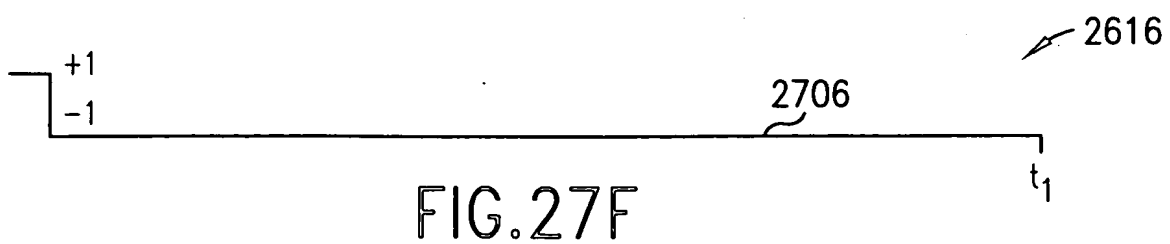
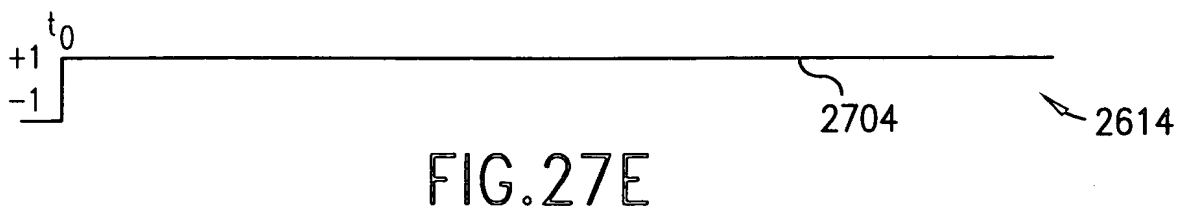
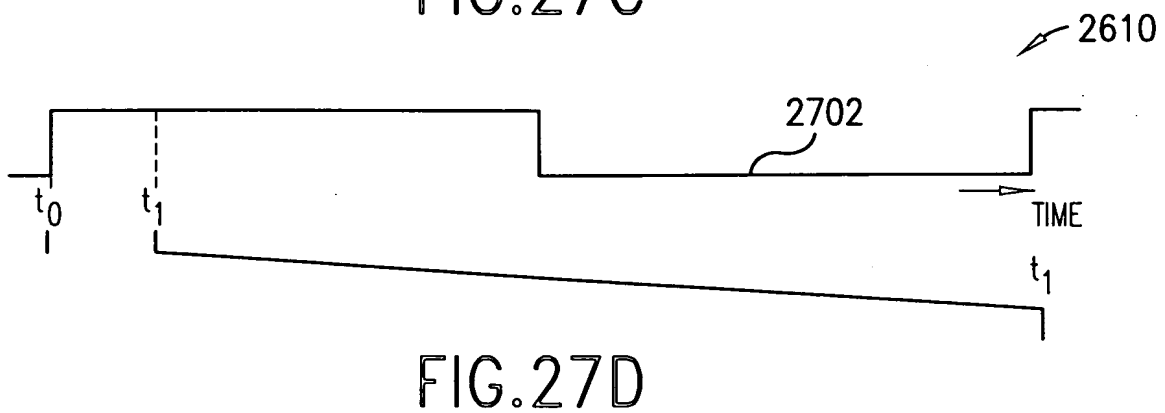
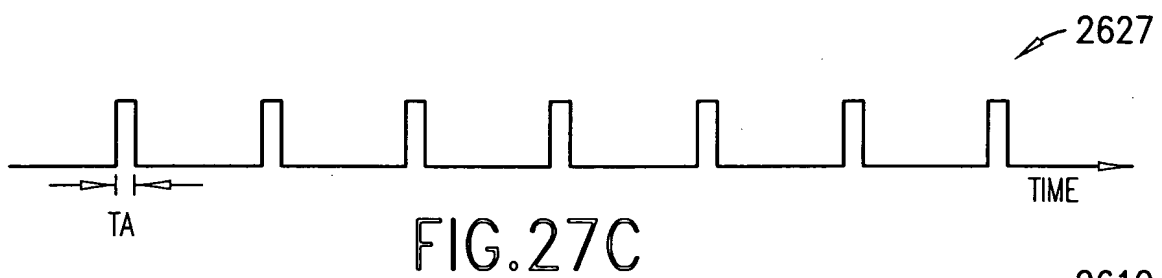
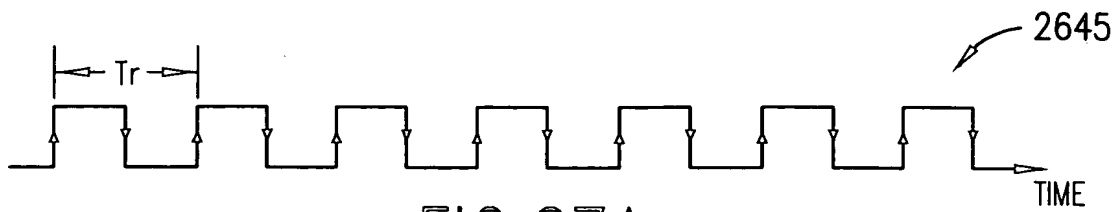
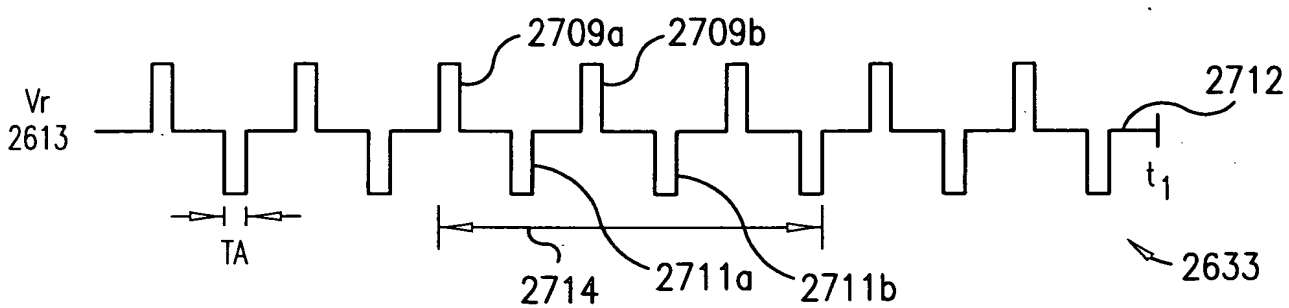
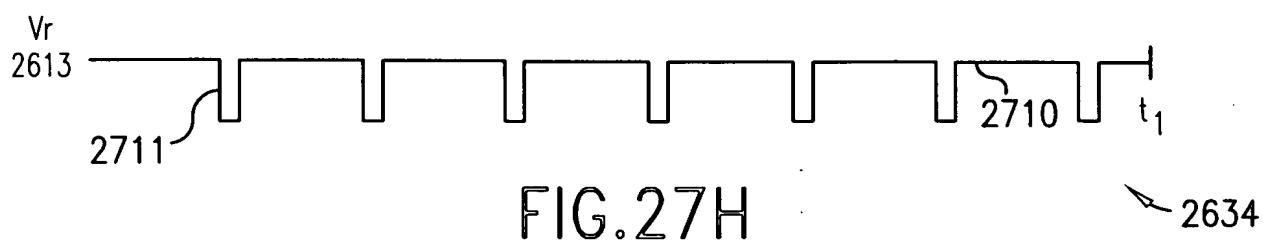
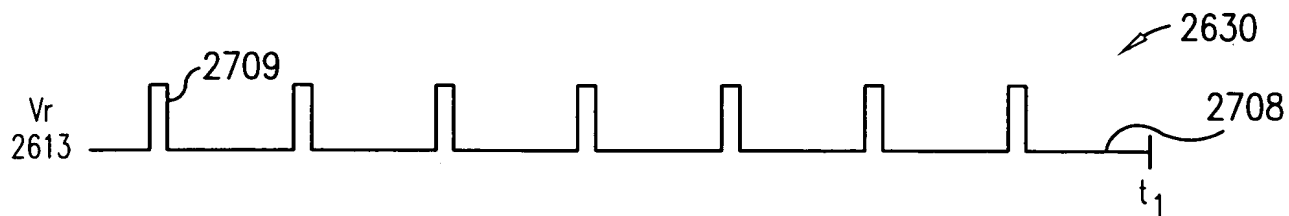


FIG. 26D





APERTURE = 500ps
 SQUARE WAVE FREQUENCY = 200Mhz
 FUNDAMENTAL CLOCK = 200Mhz (5th SUBHARMONIC)

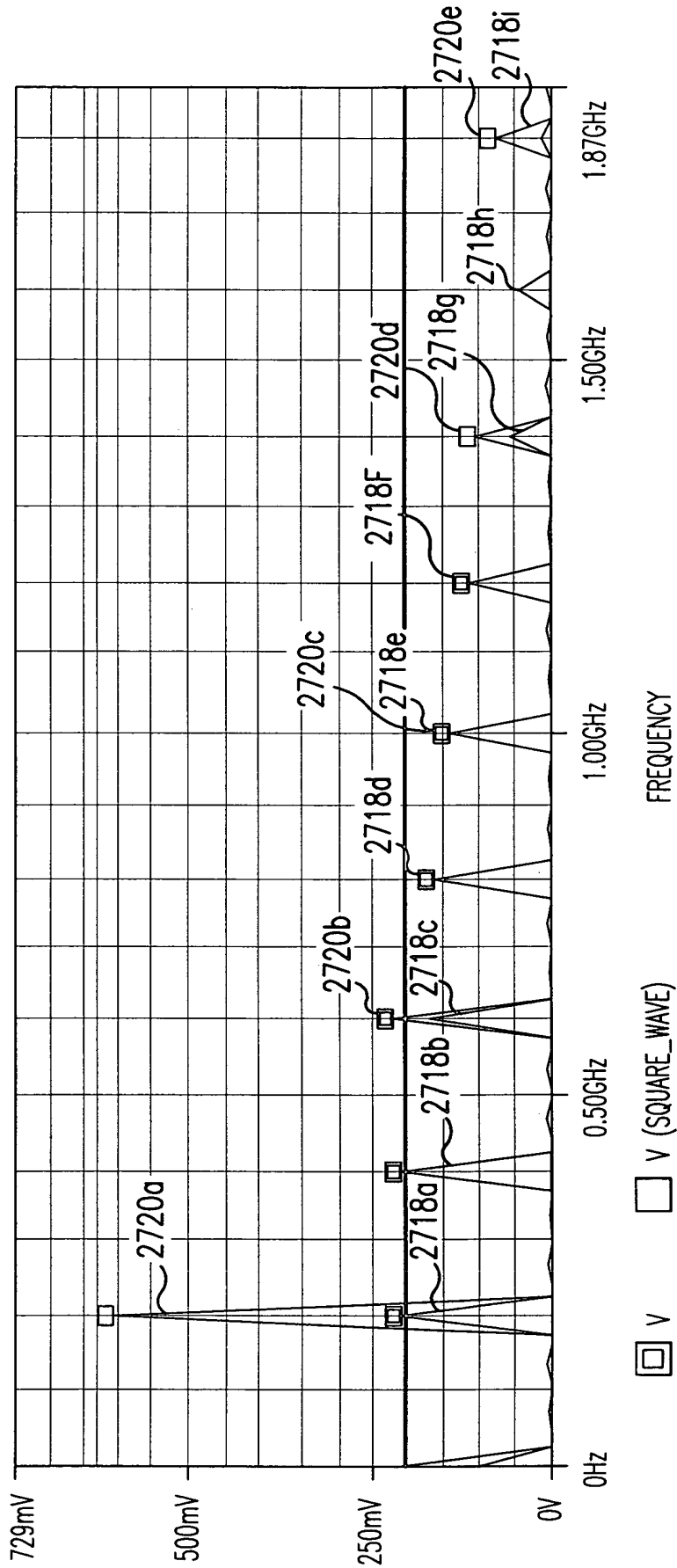


FIG.27J

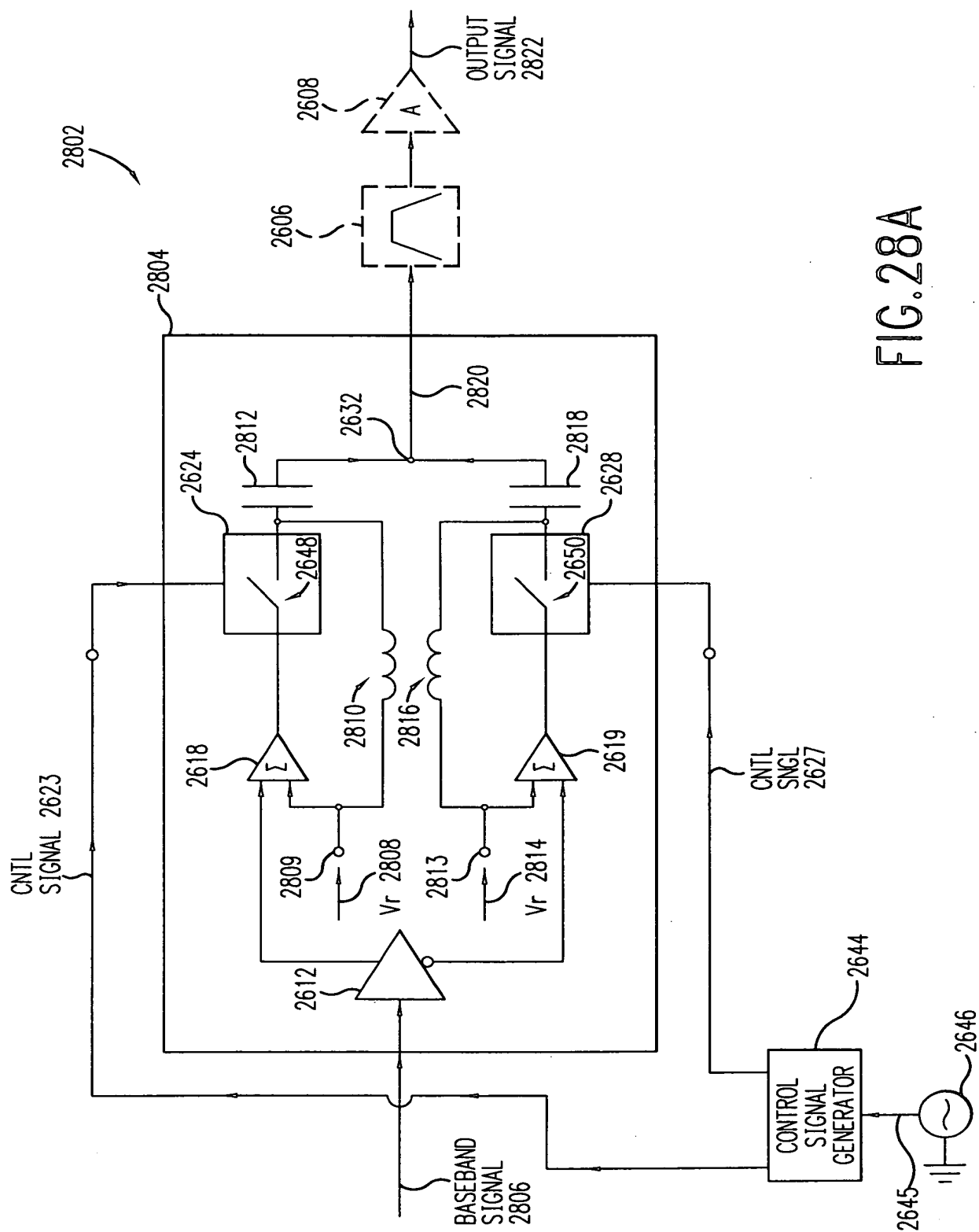


FIG. 28A

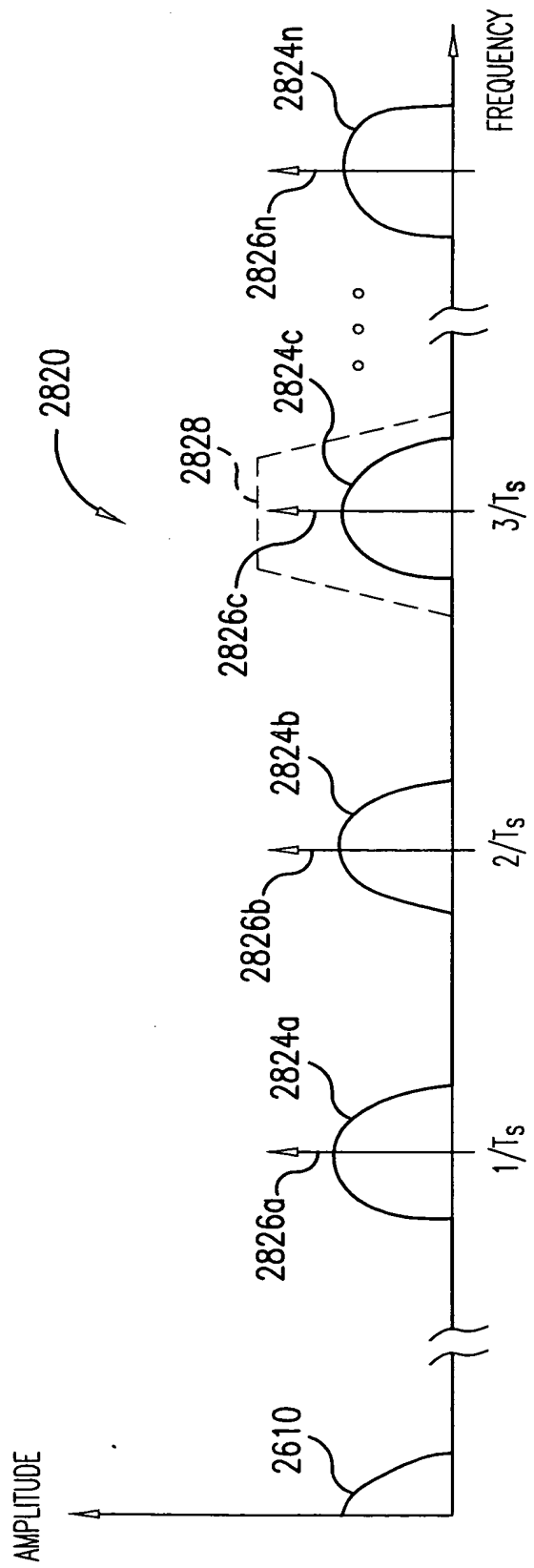


FIG. 28B

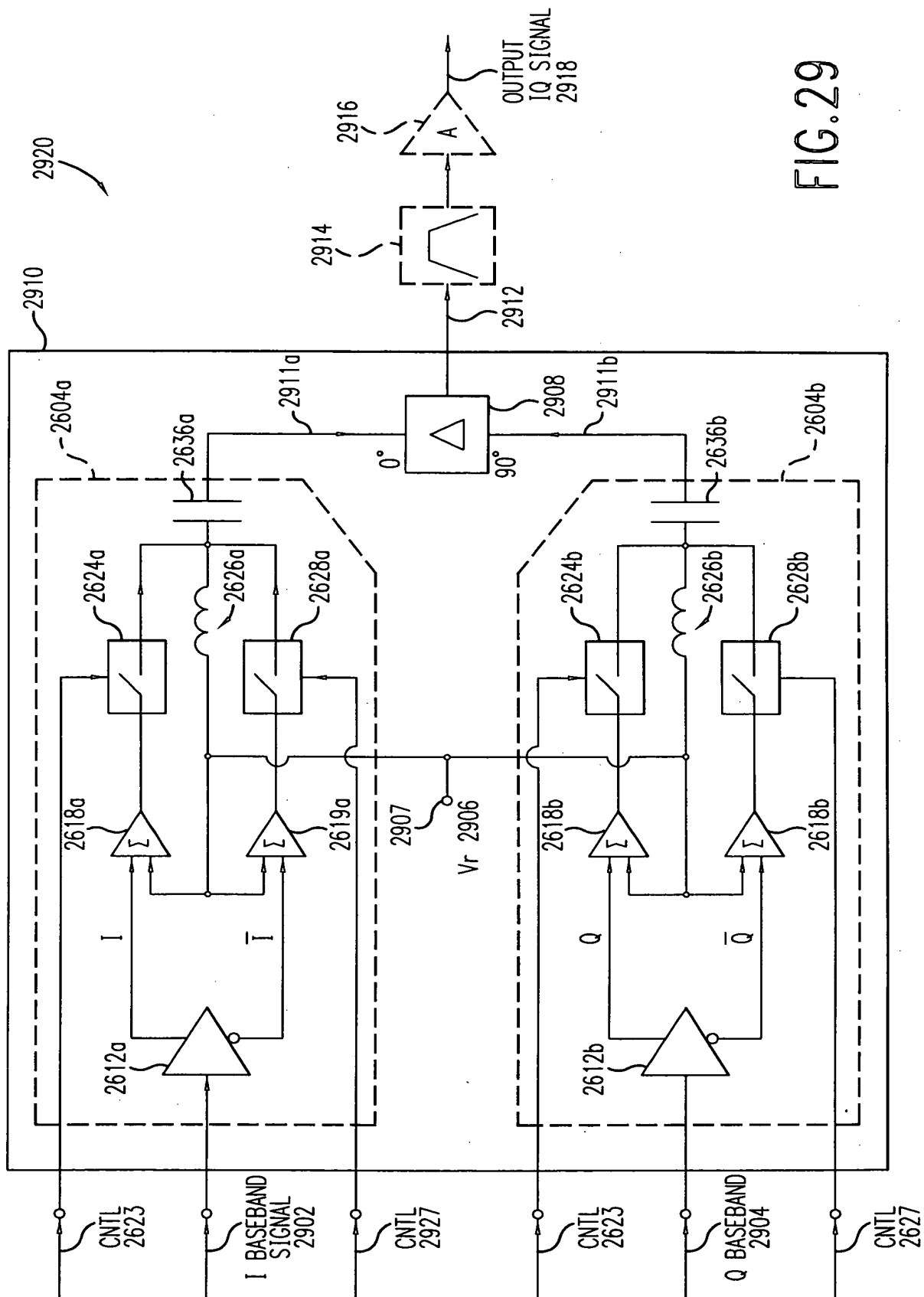


FIG. 29

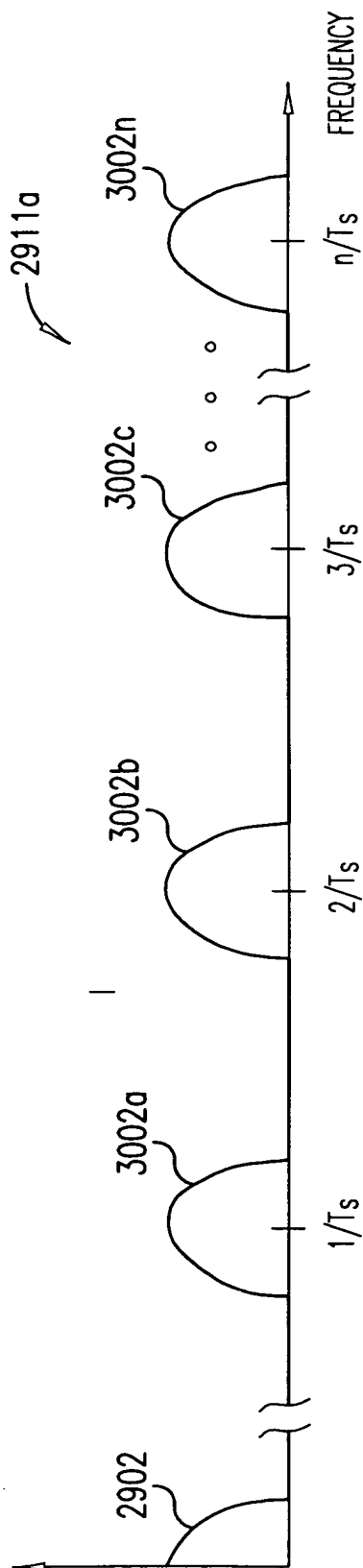


FIG. 30A

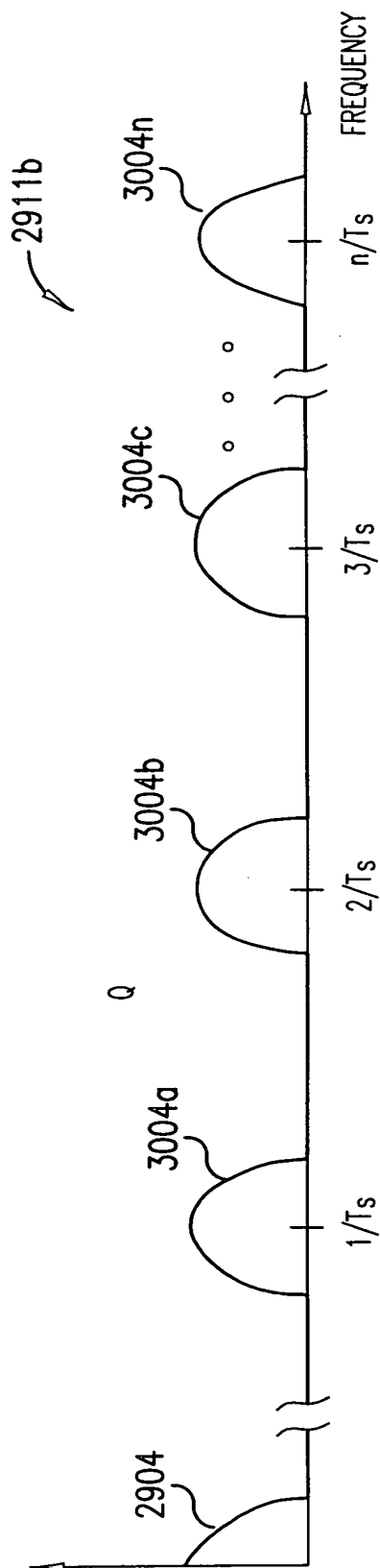


FIG. 30B

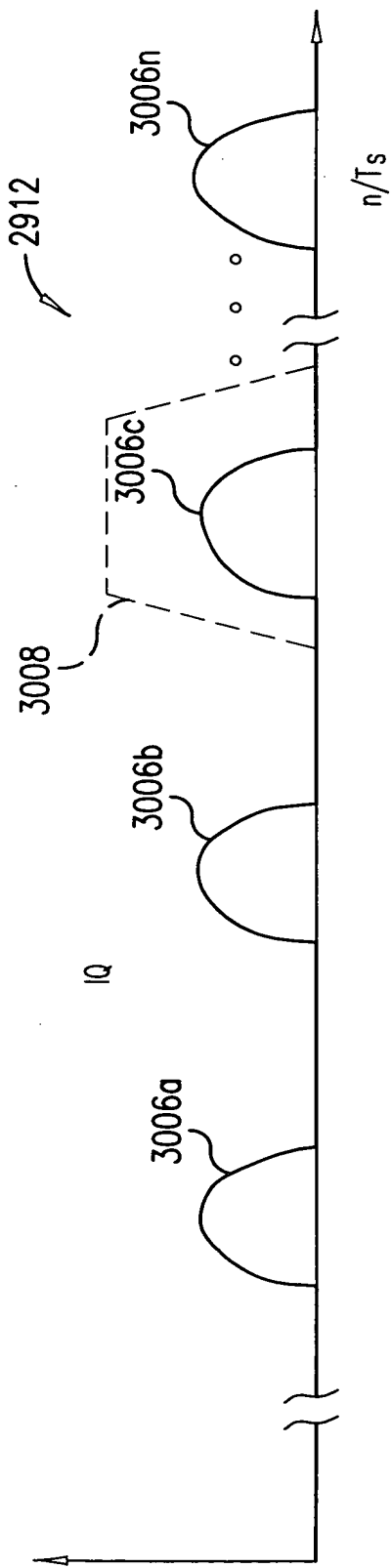


FIG.30C

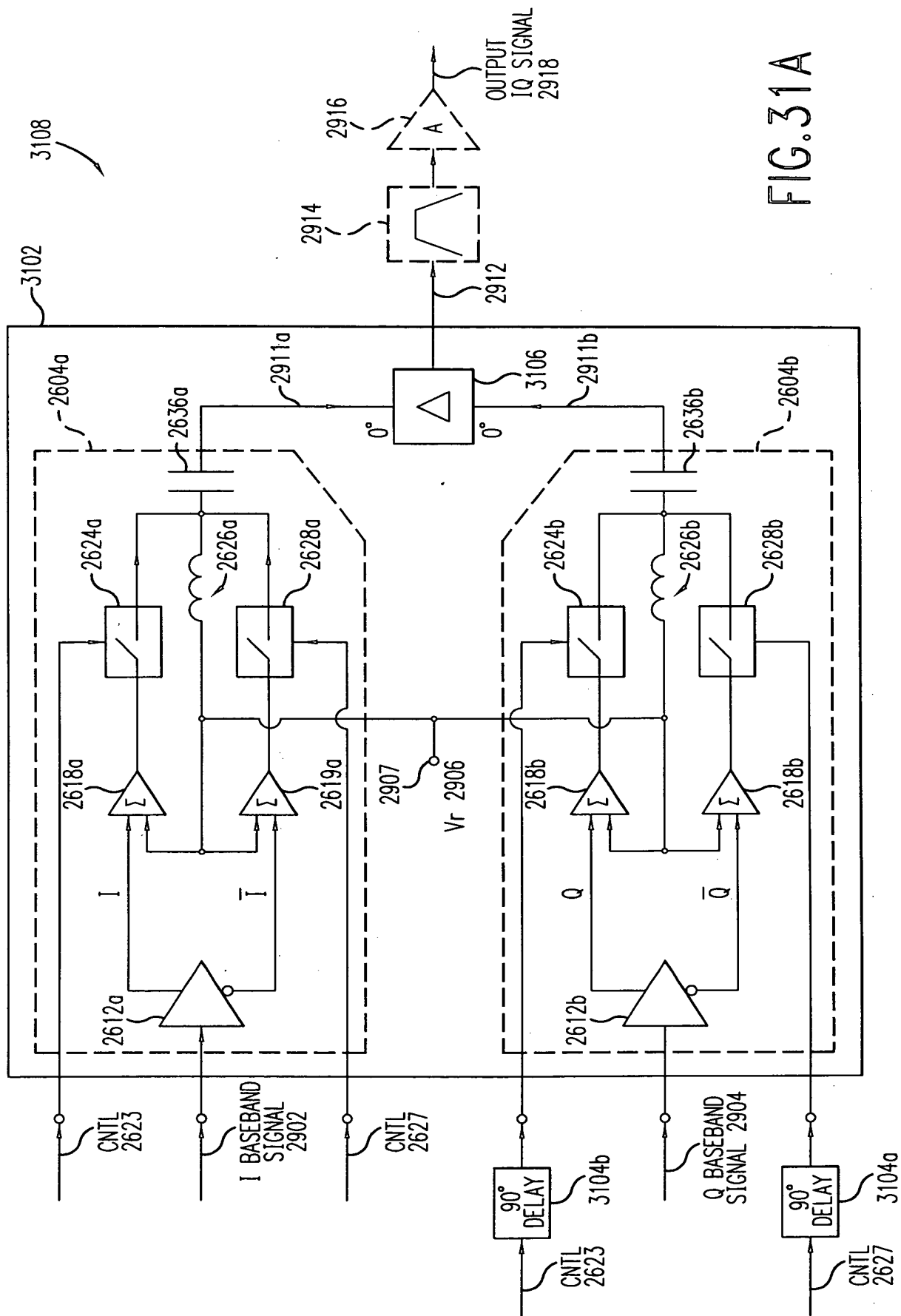


FIG. 31A

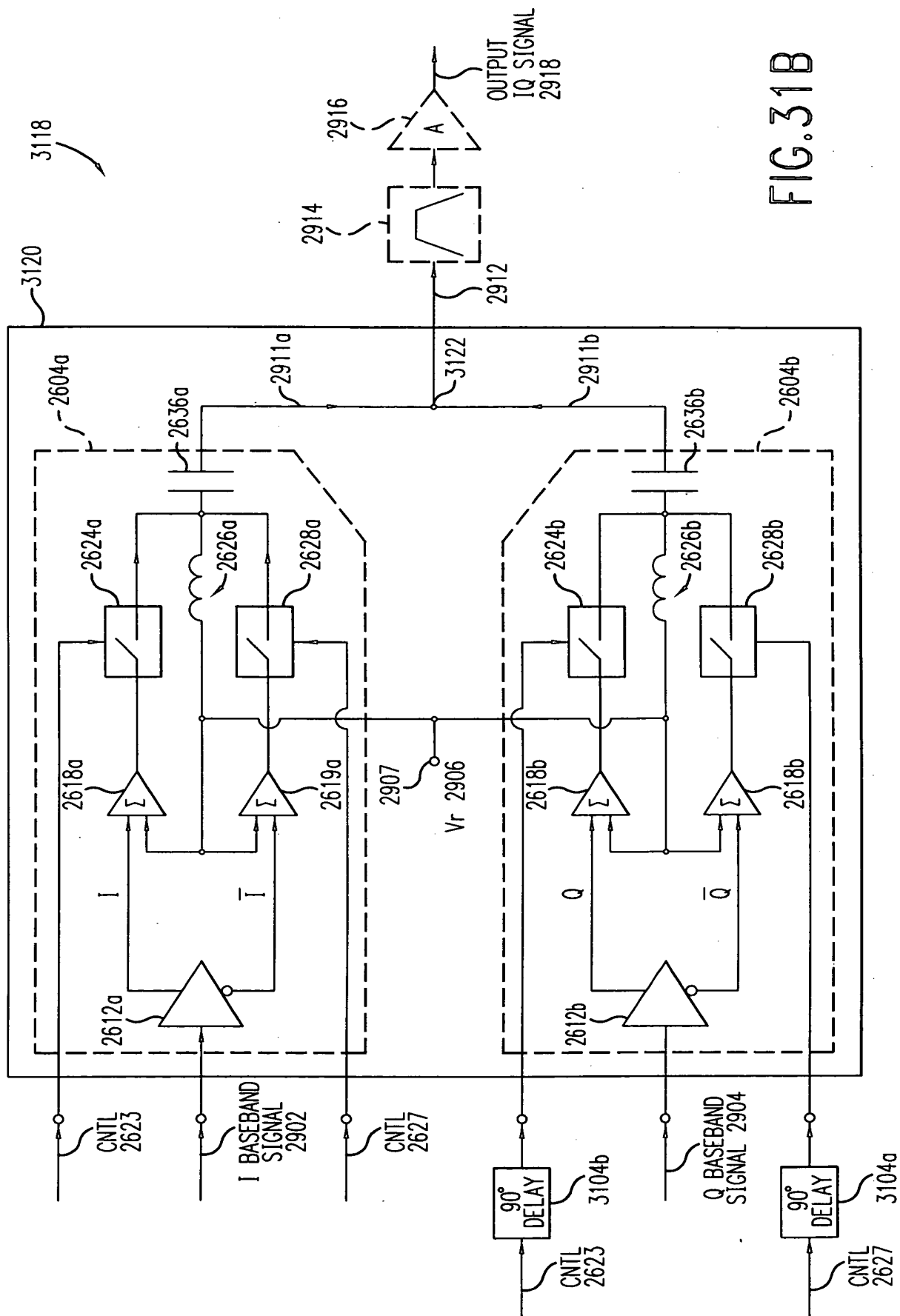


FIG. 31B

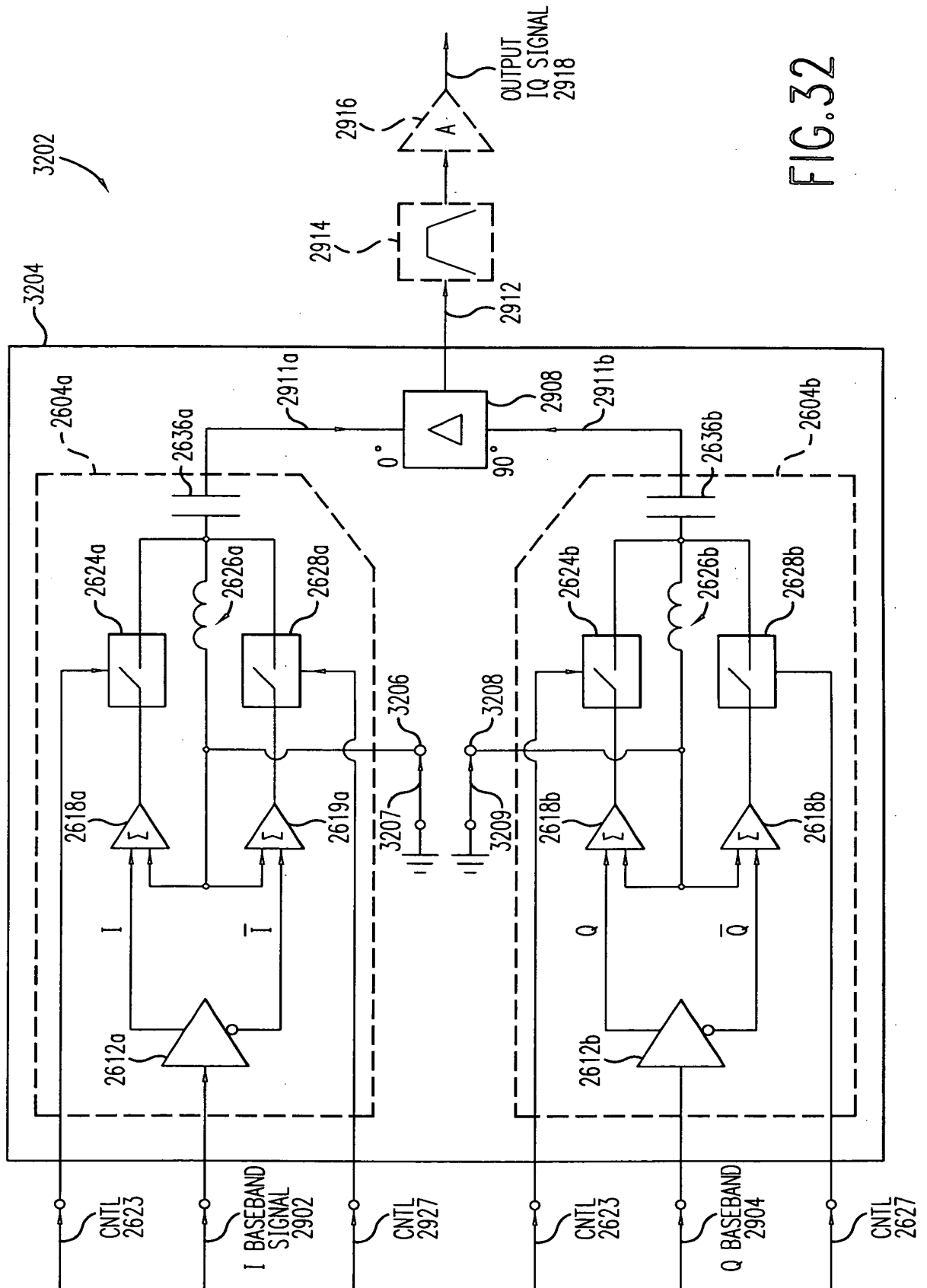


FIG. 32

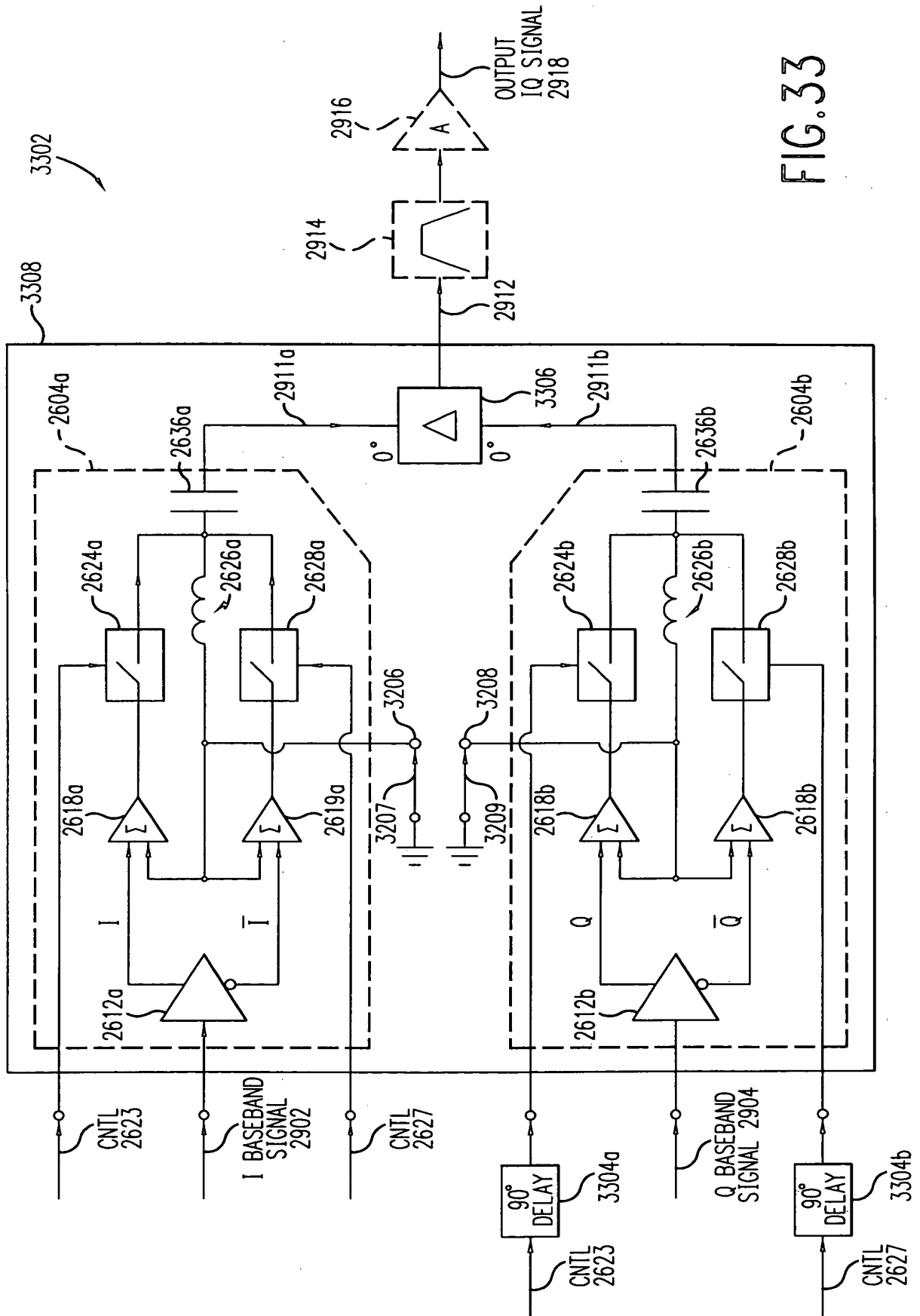


FIG. 33

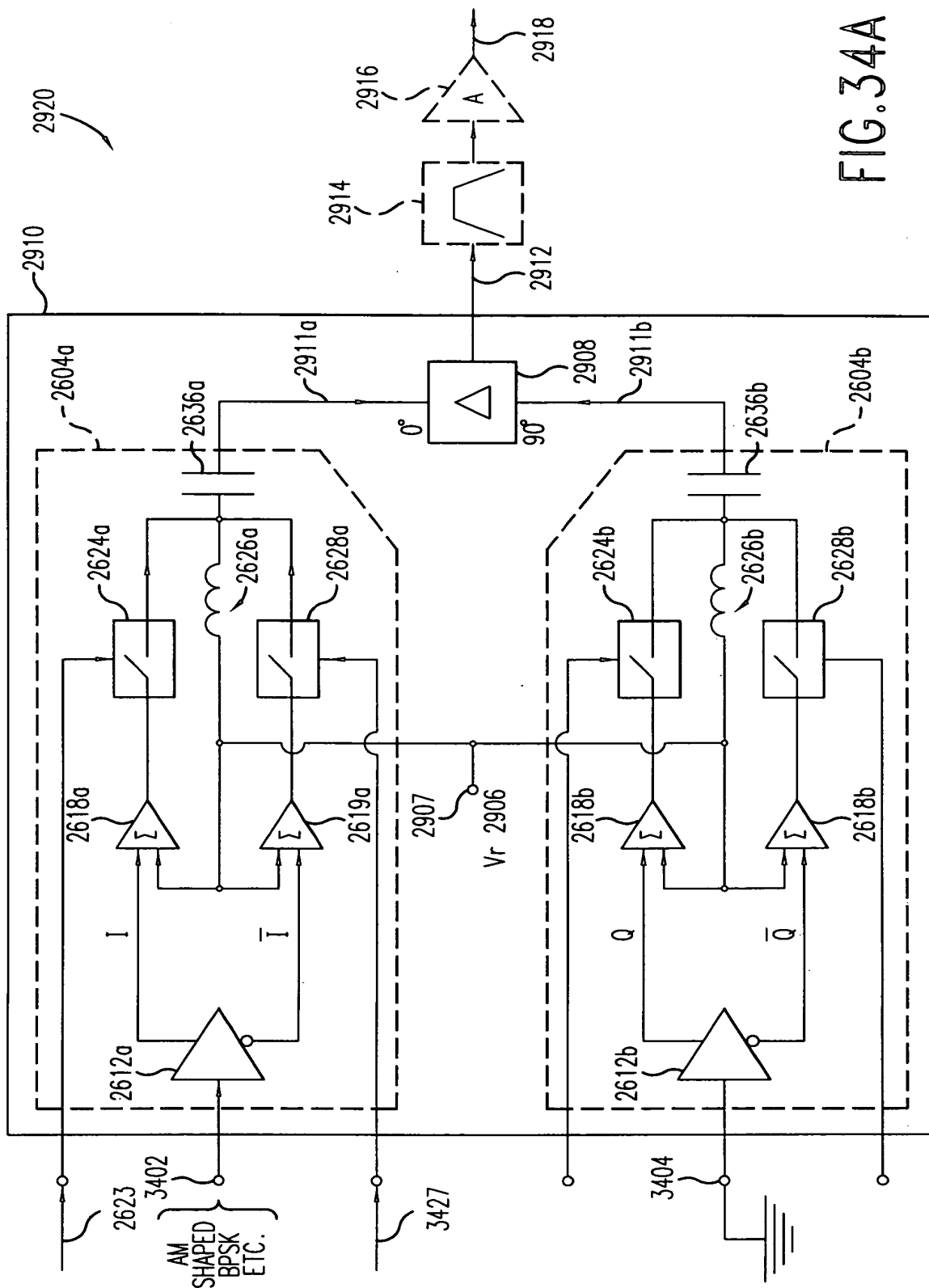
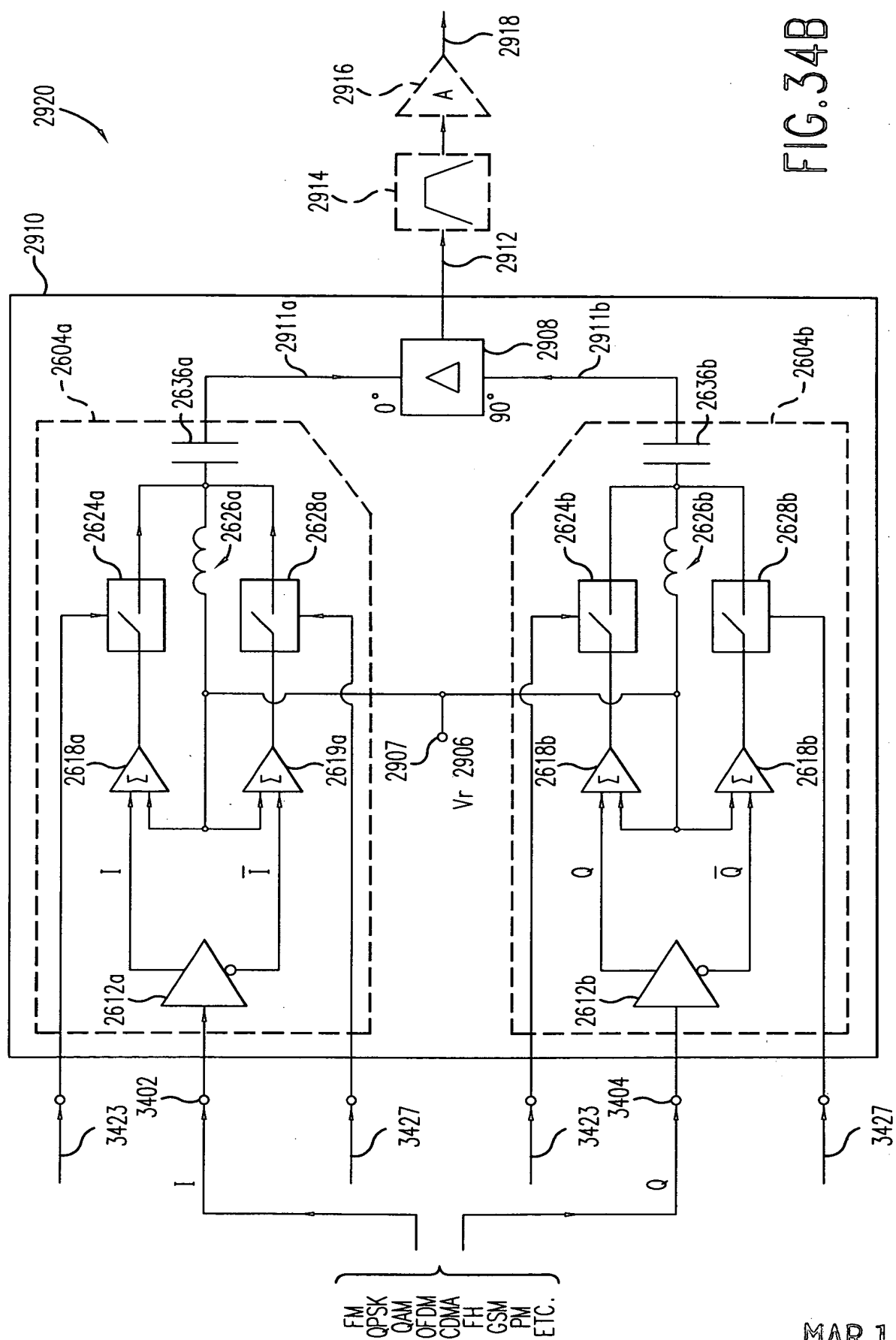


FIG. 34A



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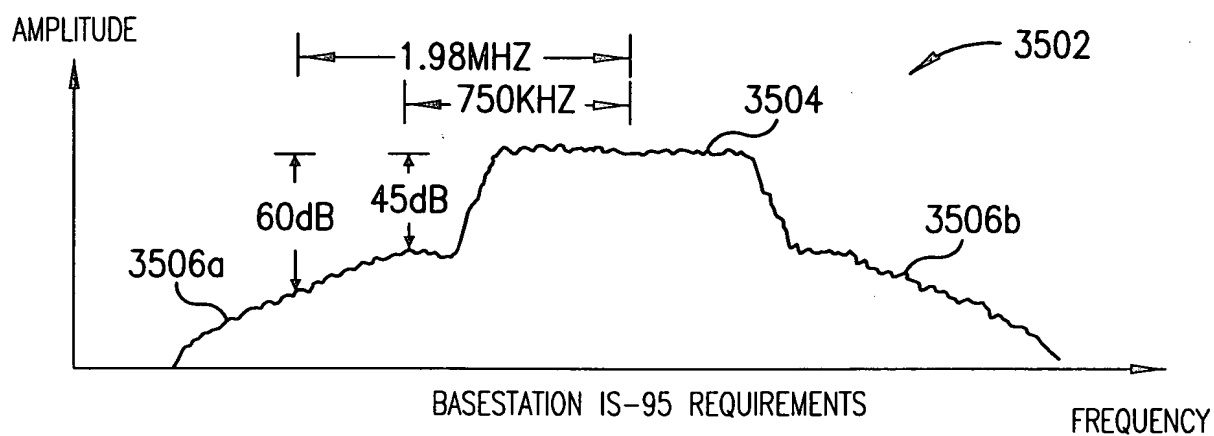


FIG.35A

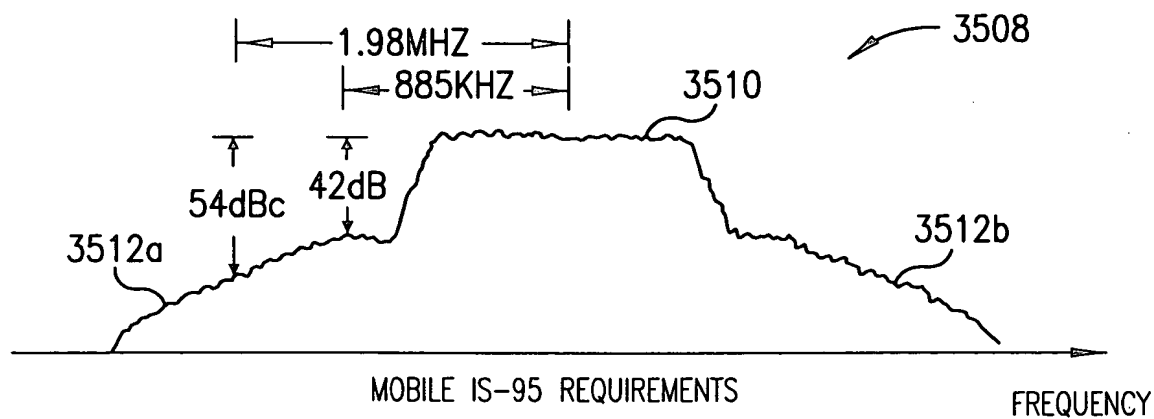
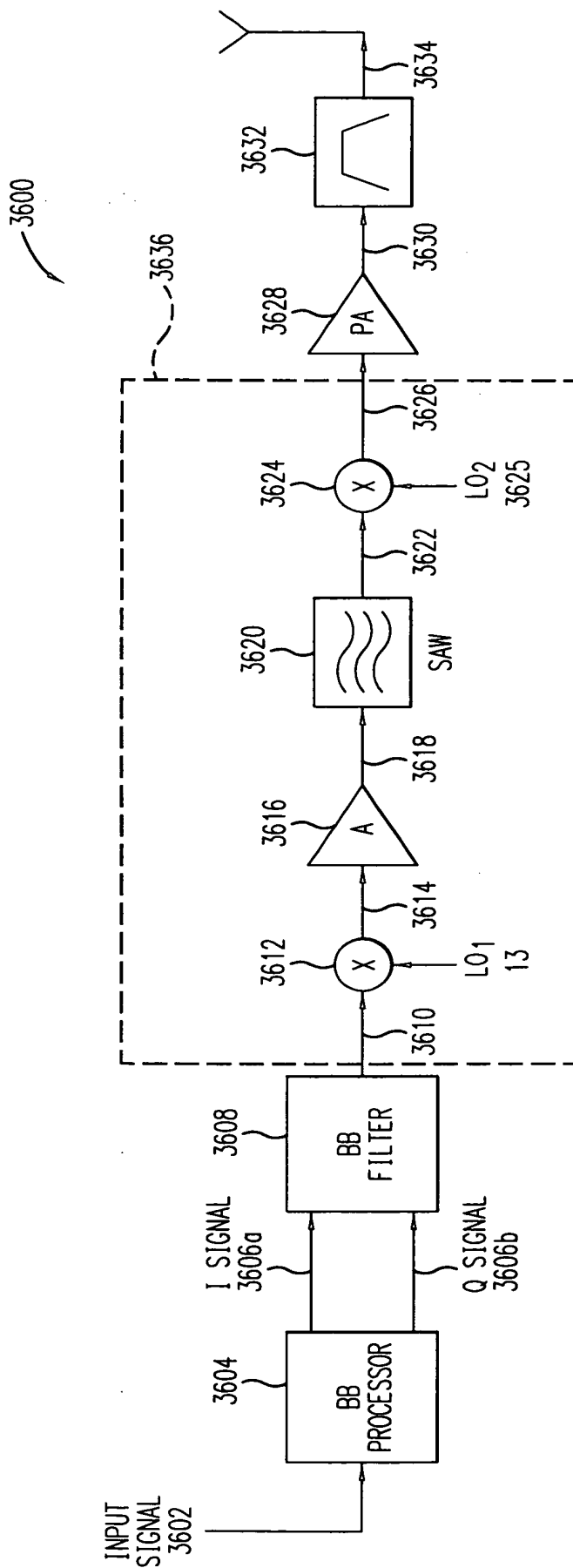


FIG.35B

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CONVENTIONAL TRANSMITTER

FIG.36

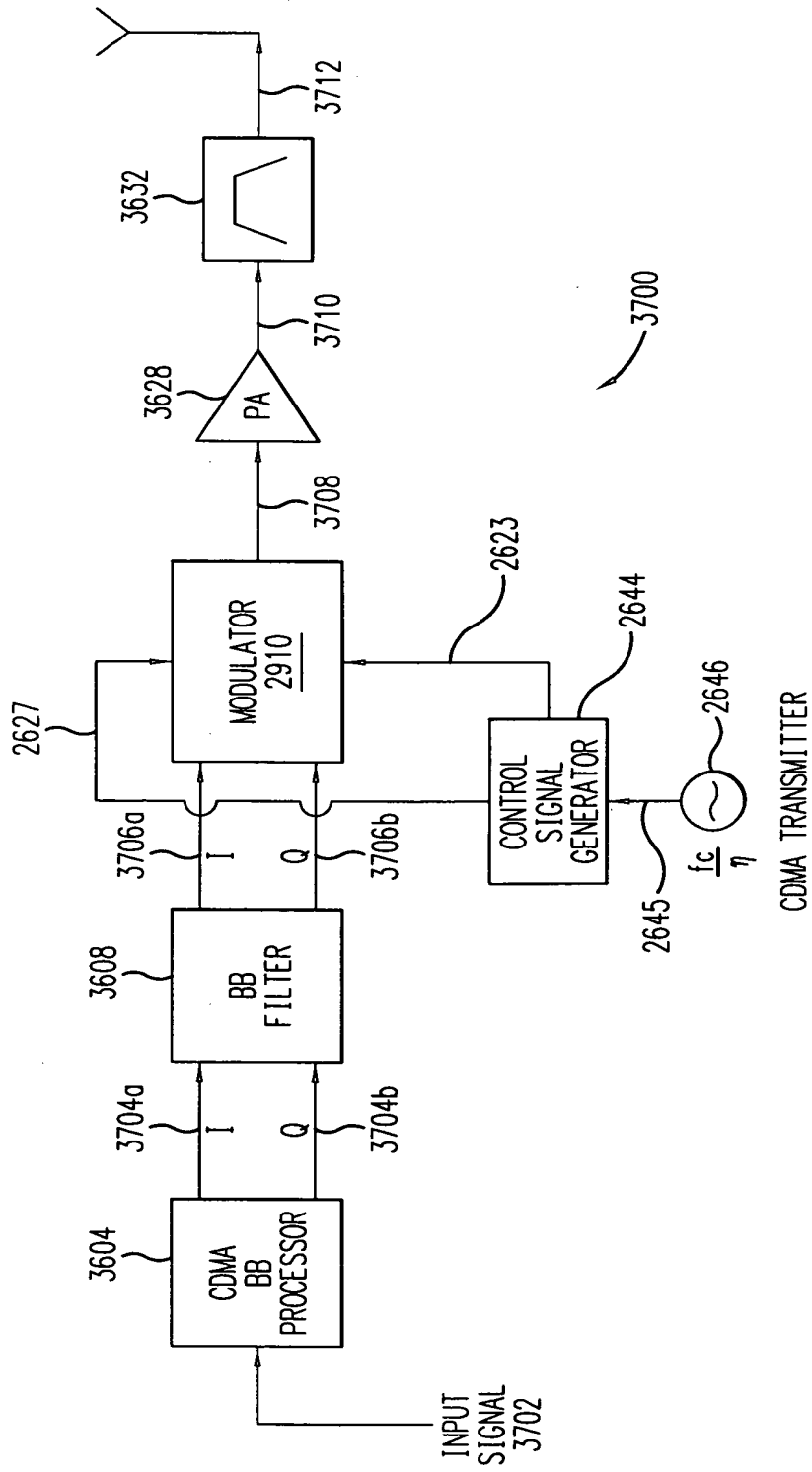
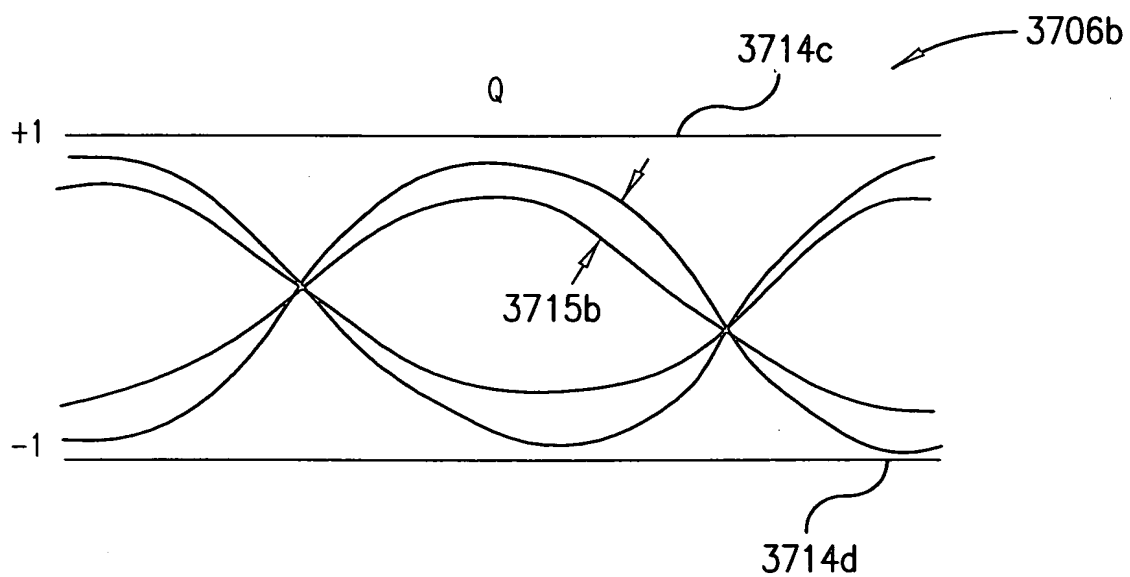
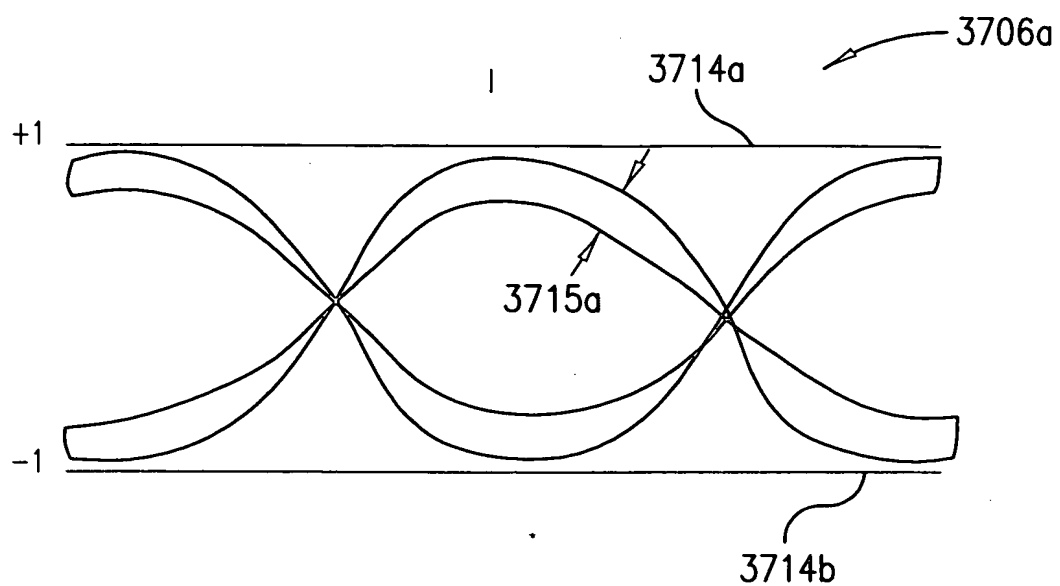


FIG. 37A



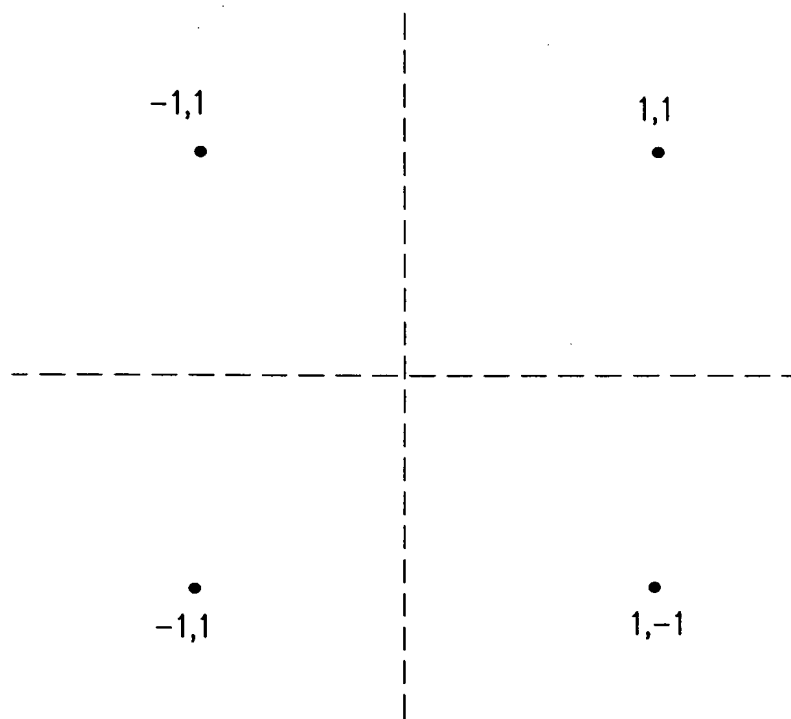


FIG.37D

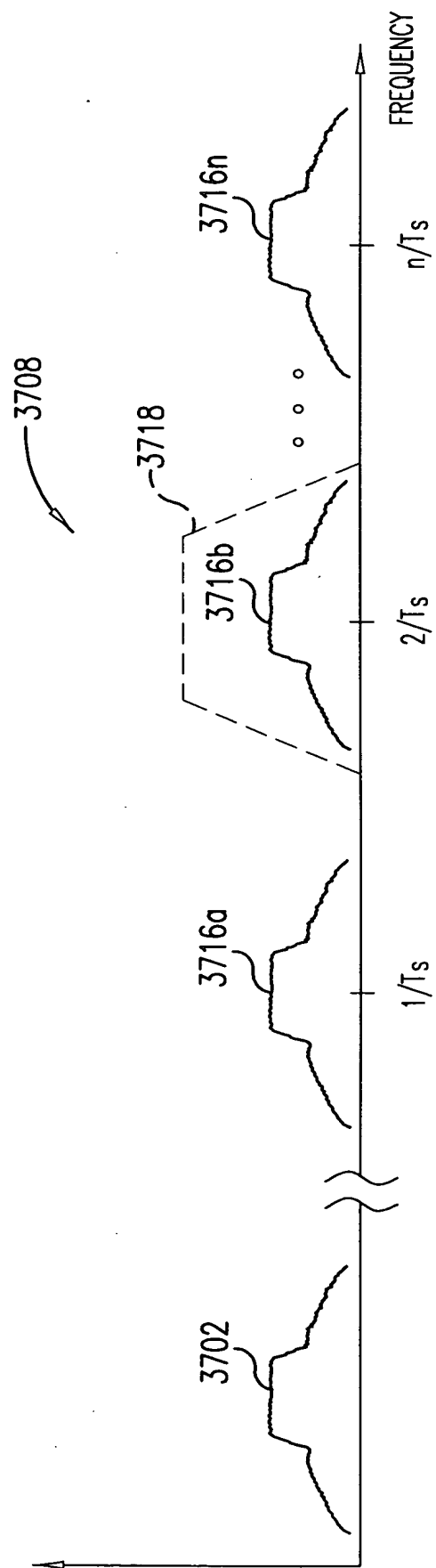


FIG.37E

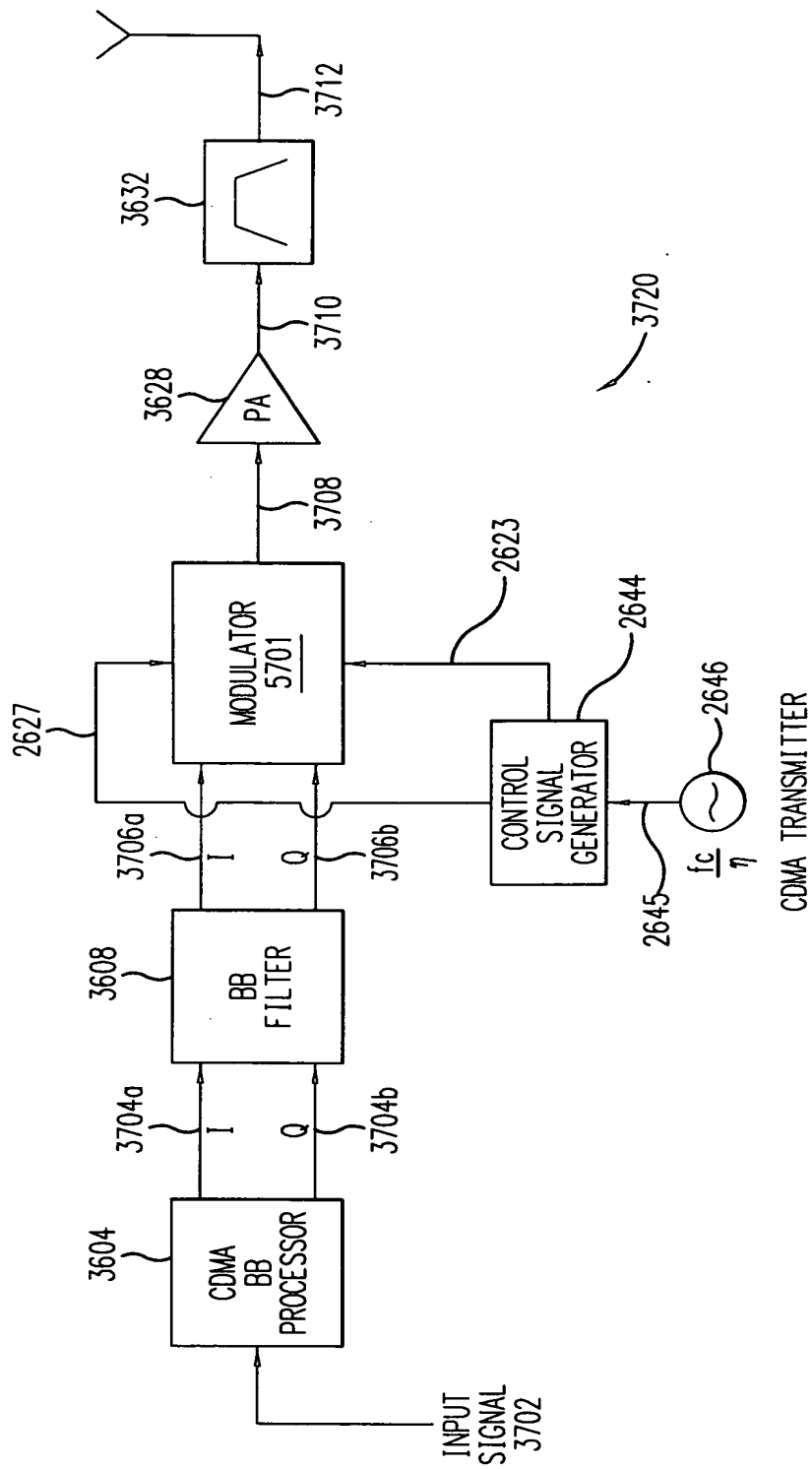


FIG. 37F

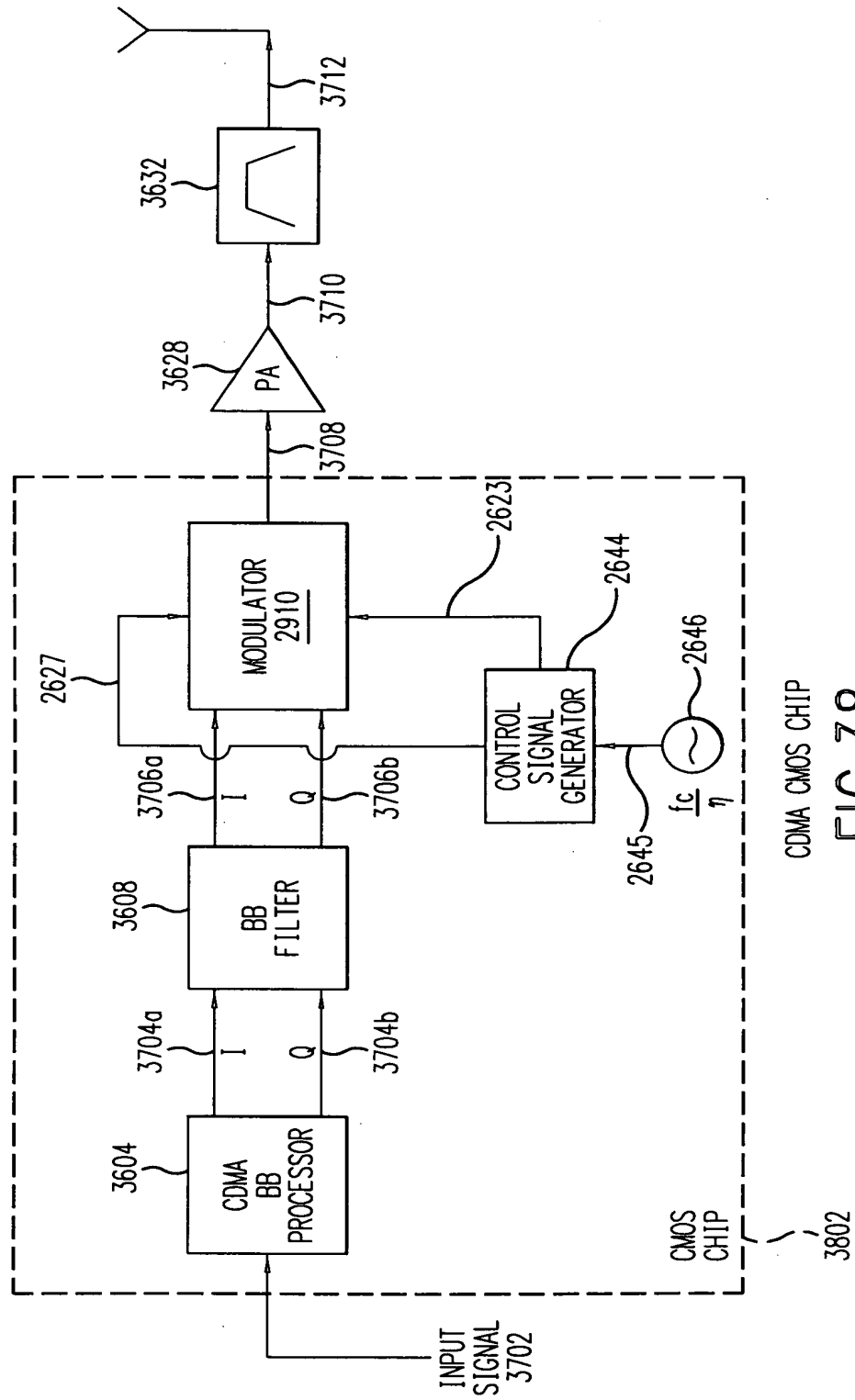


FIG. 38

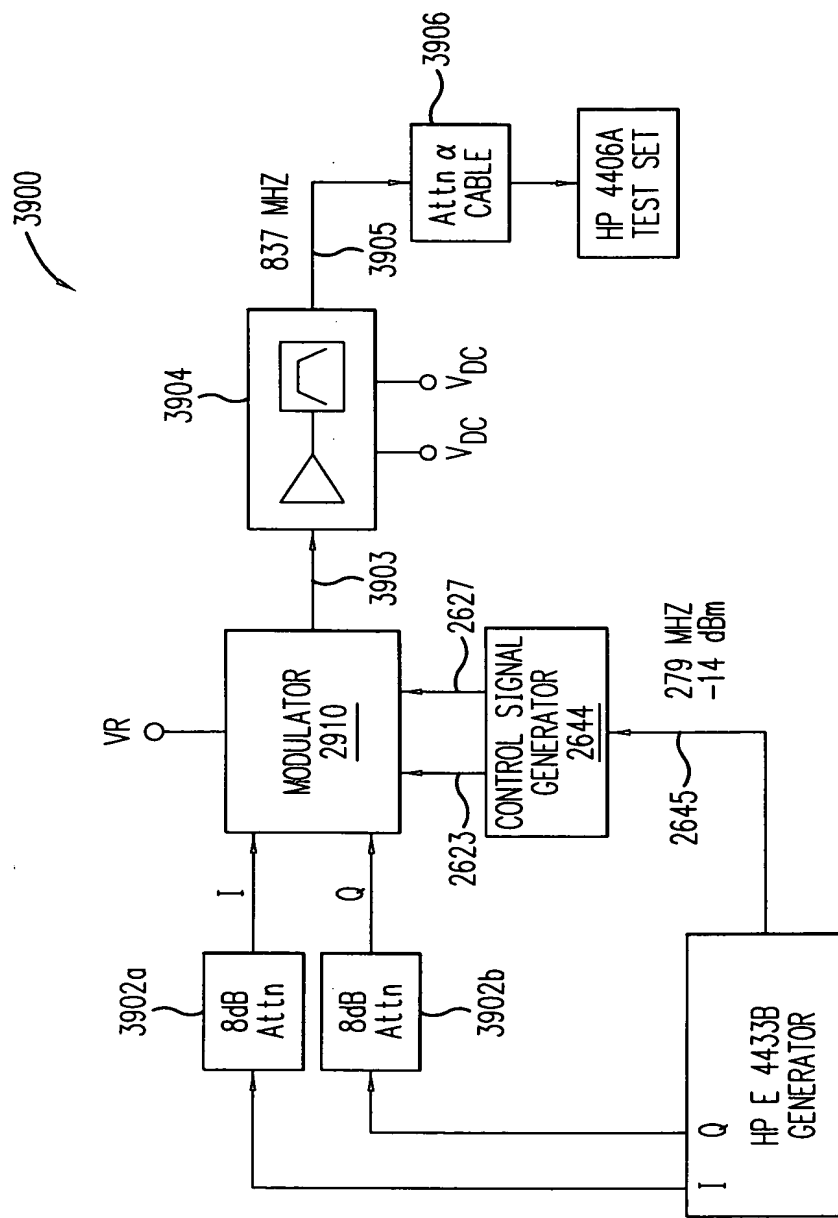


FIG. 39

4002

BASE STATION

RHO	0.9970
EVM	5.51%
PHASE ERROR	1.80°
MAGNITUDE ERROR	4.53%
CARRIER INSERTION	-37.91 dB
PA POWER OUT	28.06 dBm

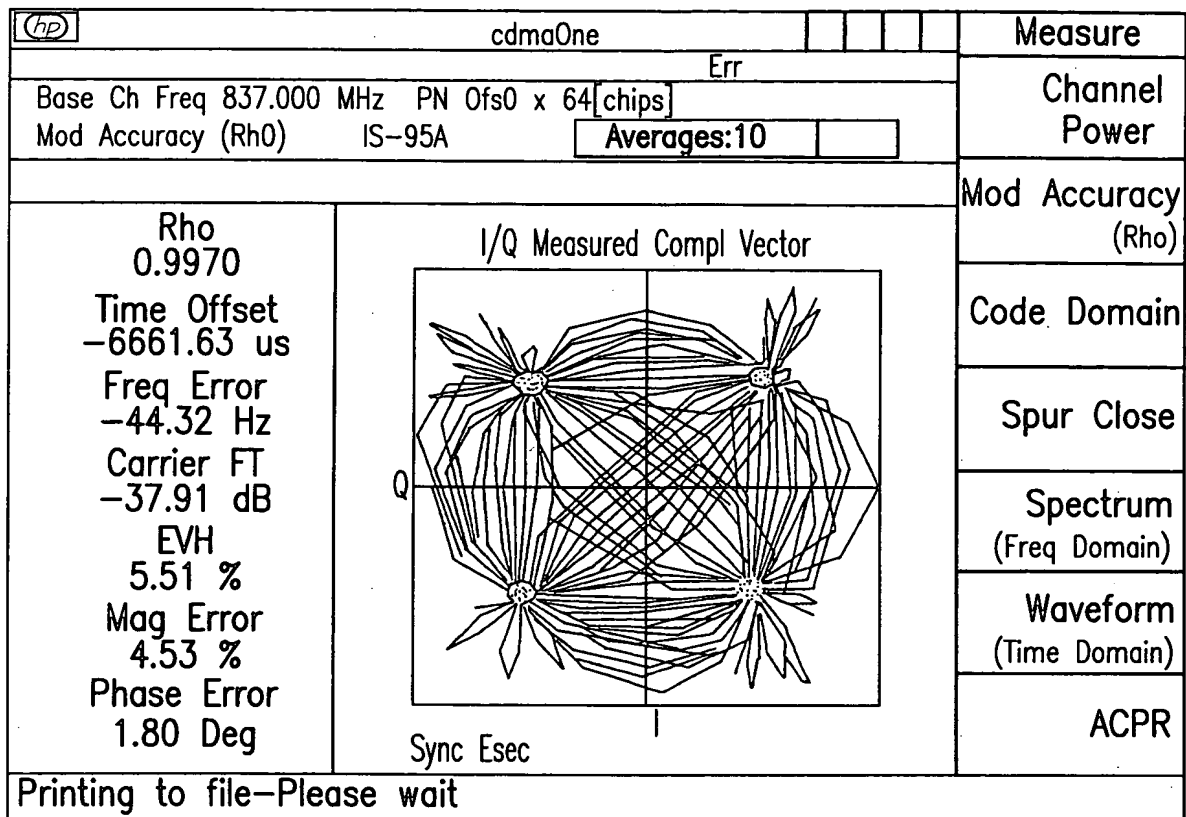
FIG. 40

FREQUENCY (MHz) (MOBILE STATION)

	LOW	MIDDLE	HIGH
RHO	0.9892	0.9969	0.9892
EVM	10.39%	5.54%	10.39%
PHASE ERROR	4.47°	2.24°	4.08°
MAGNITUDE ERROR	6.84%	4.21%	8.27%
CARRIER INSERTION	-40.15 dB	-44.58 dB	-35.27 dB
PA POWER OUT	27.36 dBm	28.11 dBm	27.55 dBm

4102

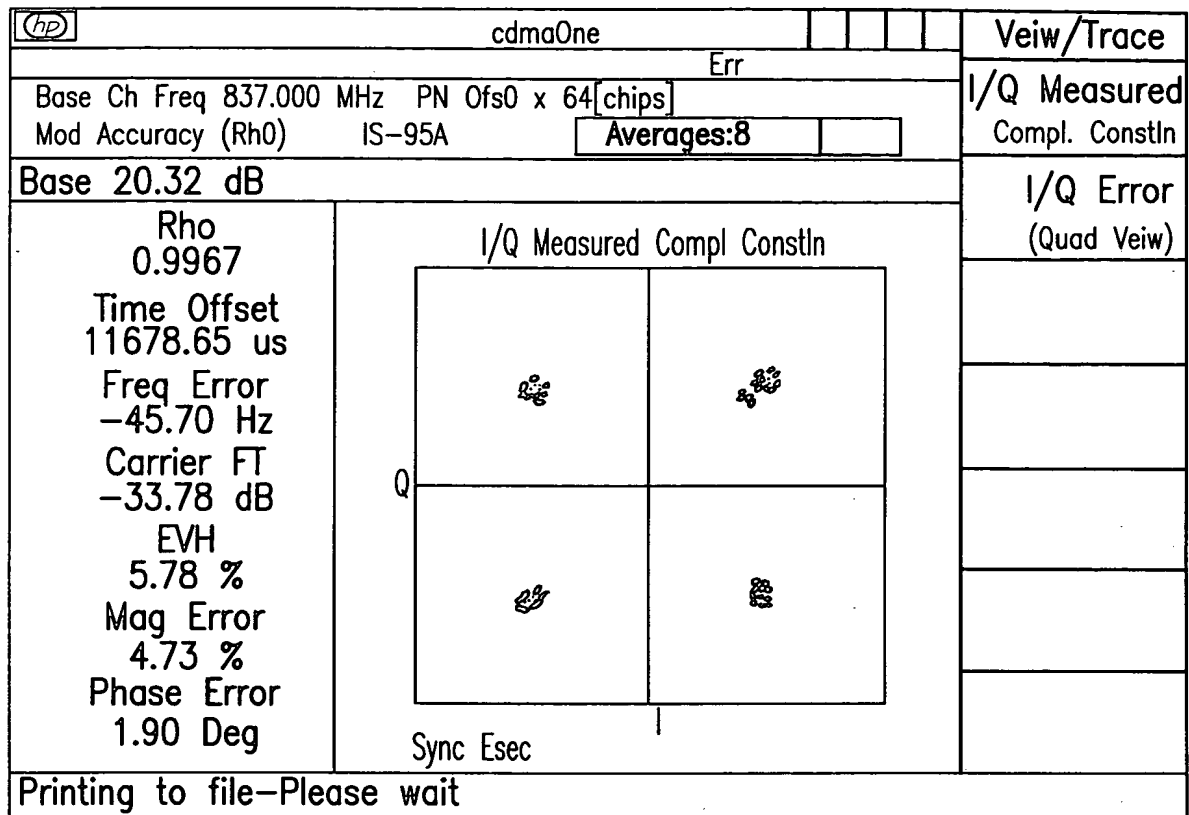
FIG. 41



BASE STATION CONSTELLATION FOR PILOT CHANNEL TEST

FIG.42

4202

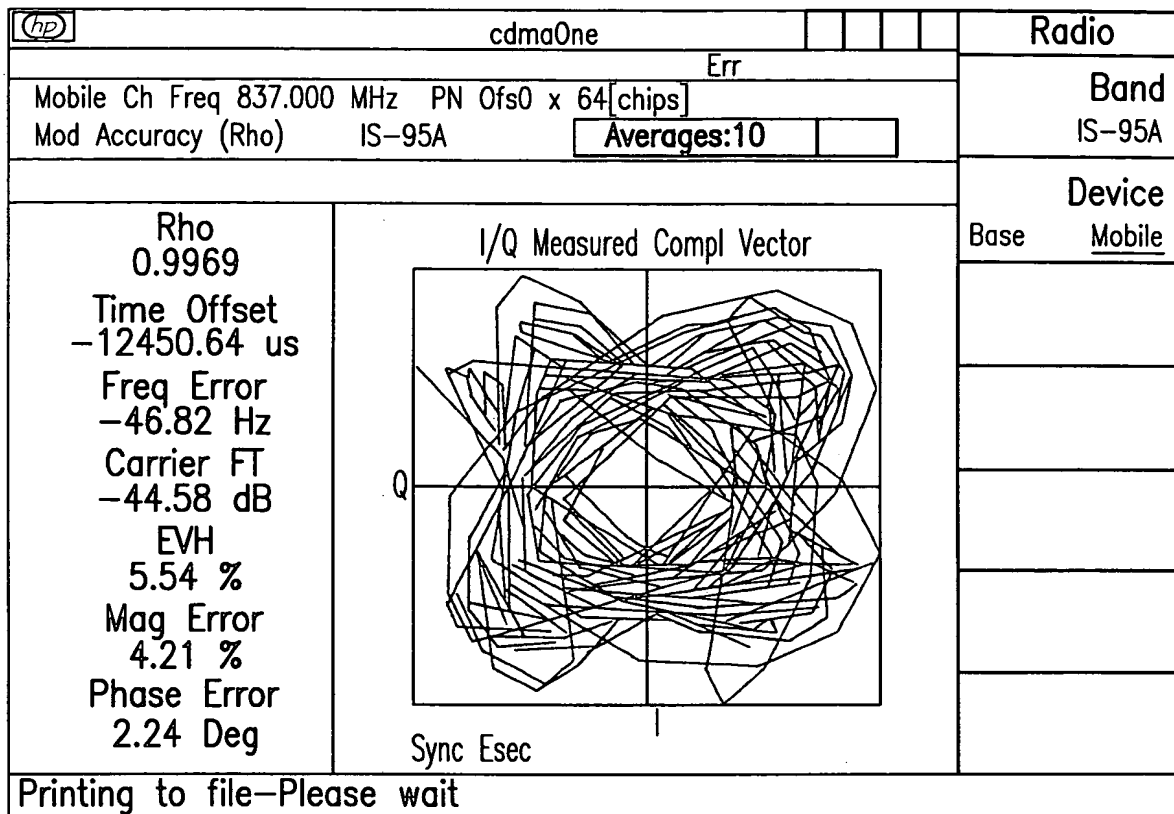


BASE STATION SAMPLED CONSTELLATION

FIG.43

4302

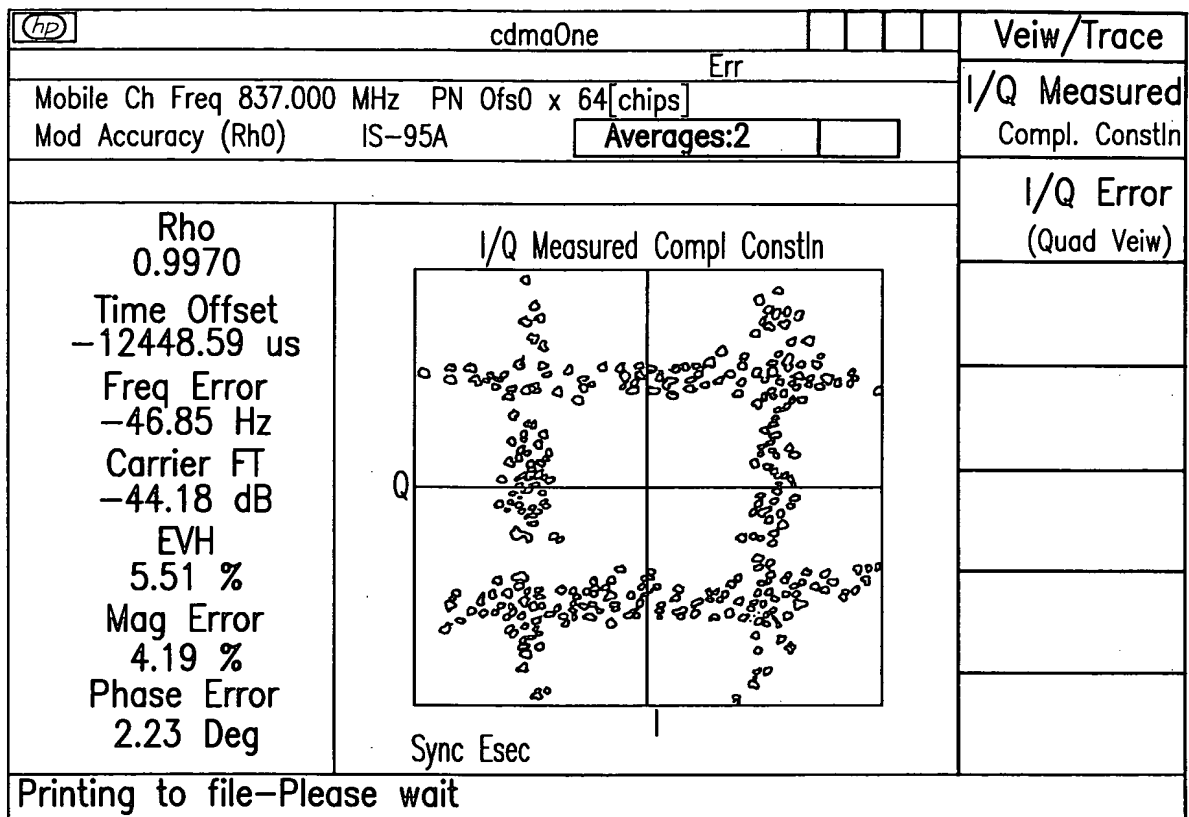
MAR 13 2005



MOBILE STATION CONSTELLATION FOR ACCESS CHANNEL TEST

FIG.44

4402

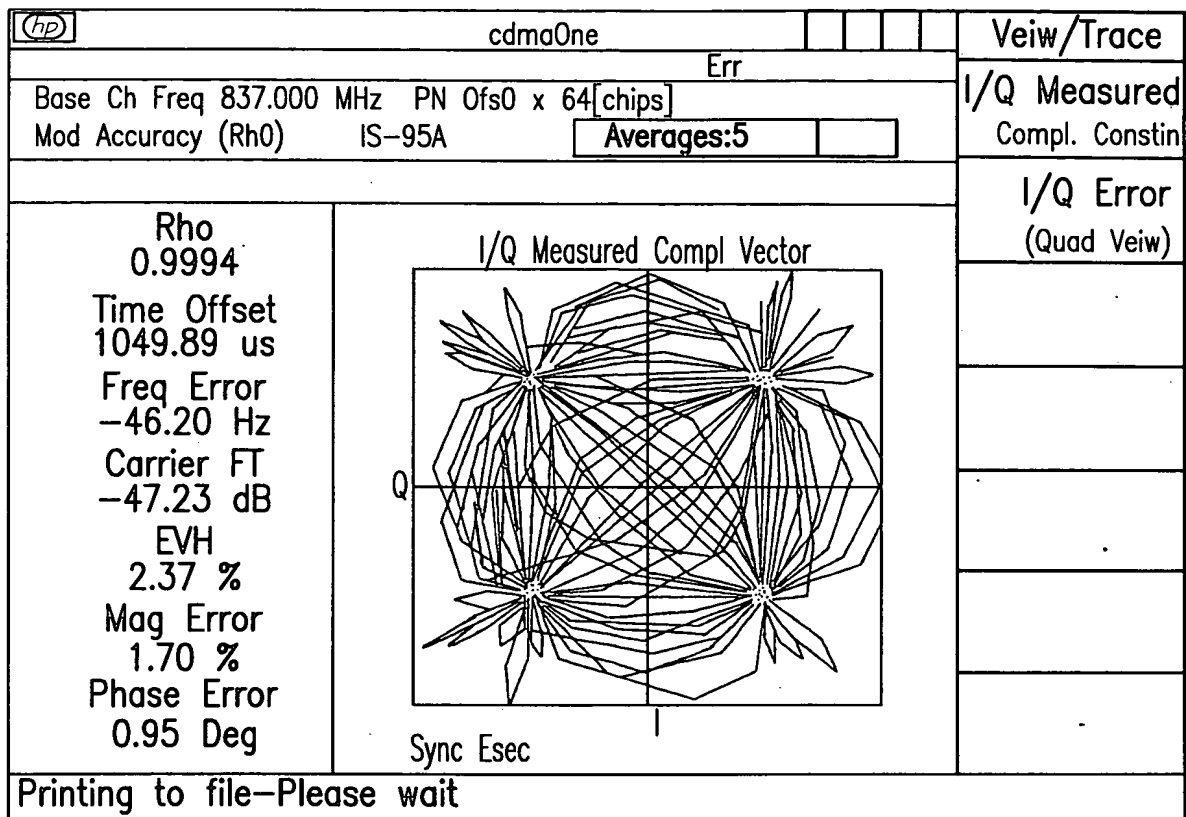


MOBILE STATION SAMPLED CONSTELLATION

FIG.45

4502

MAR 18 1998

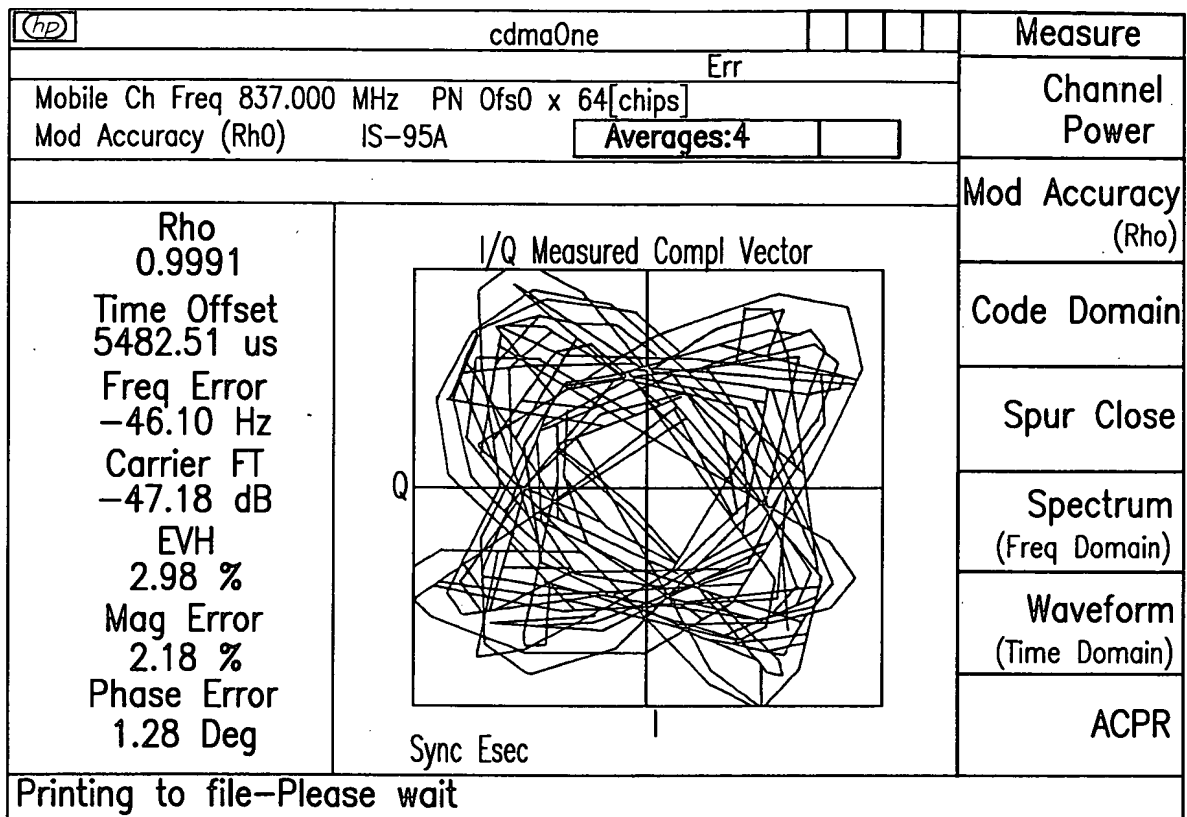


BASE STATION CONSTELLATION USING
ONLY H/P TEST EQUIPMENT

FIG.46

4602

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MOBILE CONSTELLATION USING ONLY H/P TEST EQUIPMENT

FIG.47

4702

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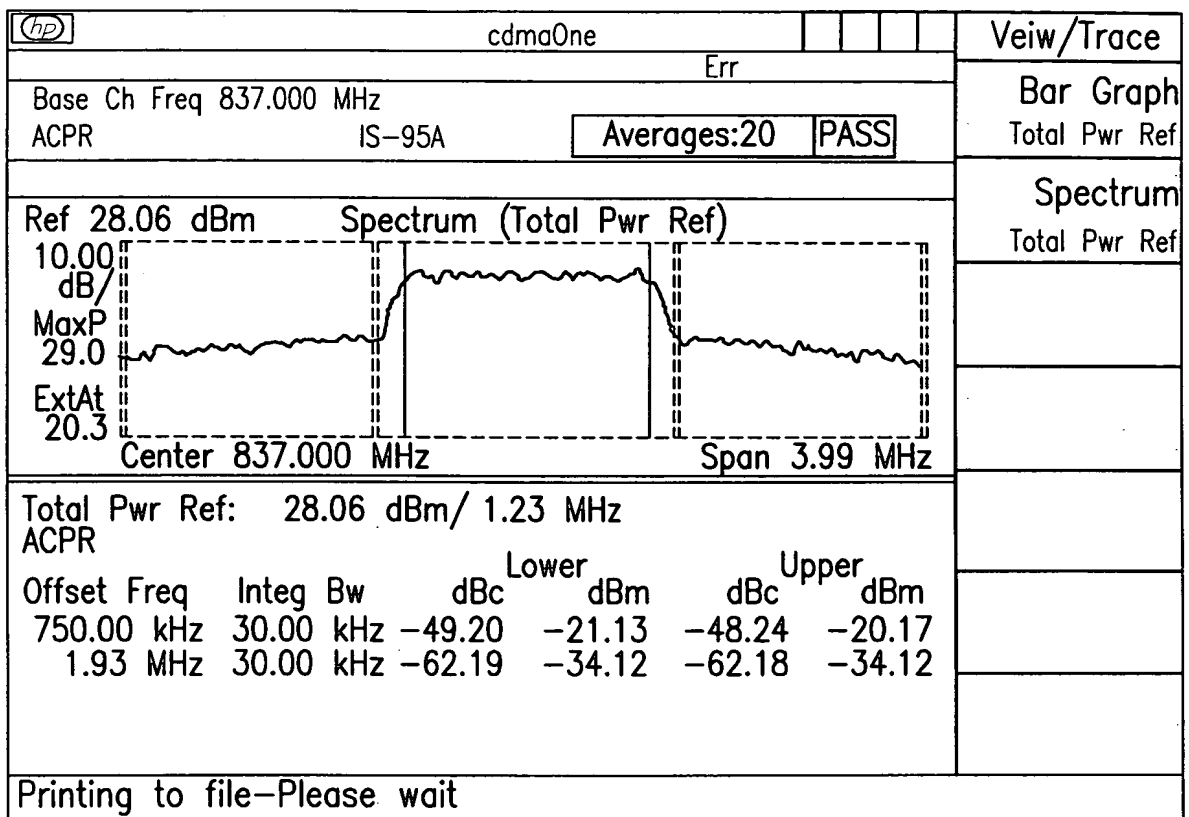
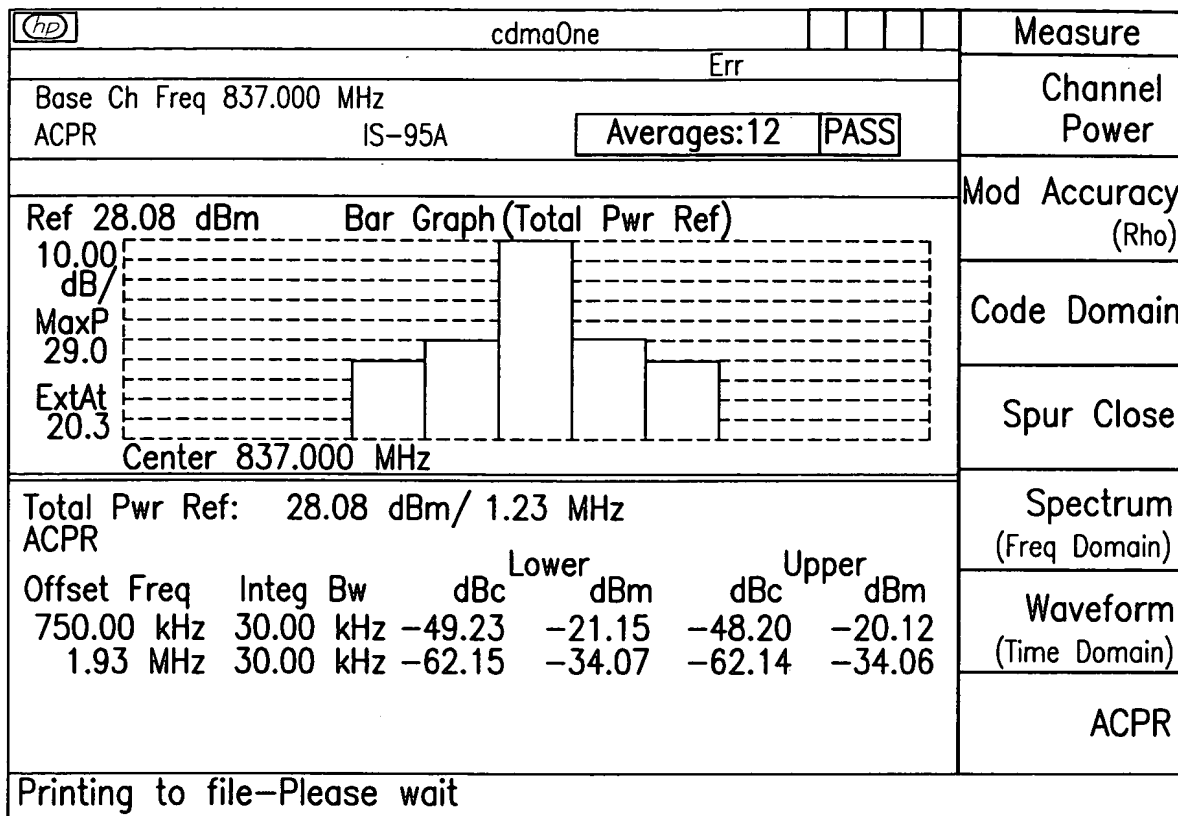


FIG.48

4802



BASE STATION SPECTRAL RESPONSE WITH MASK

FIG.49

4902

MAR 13 2006

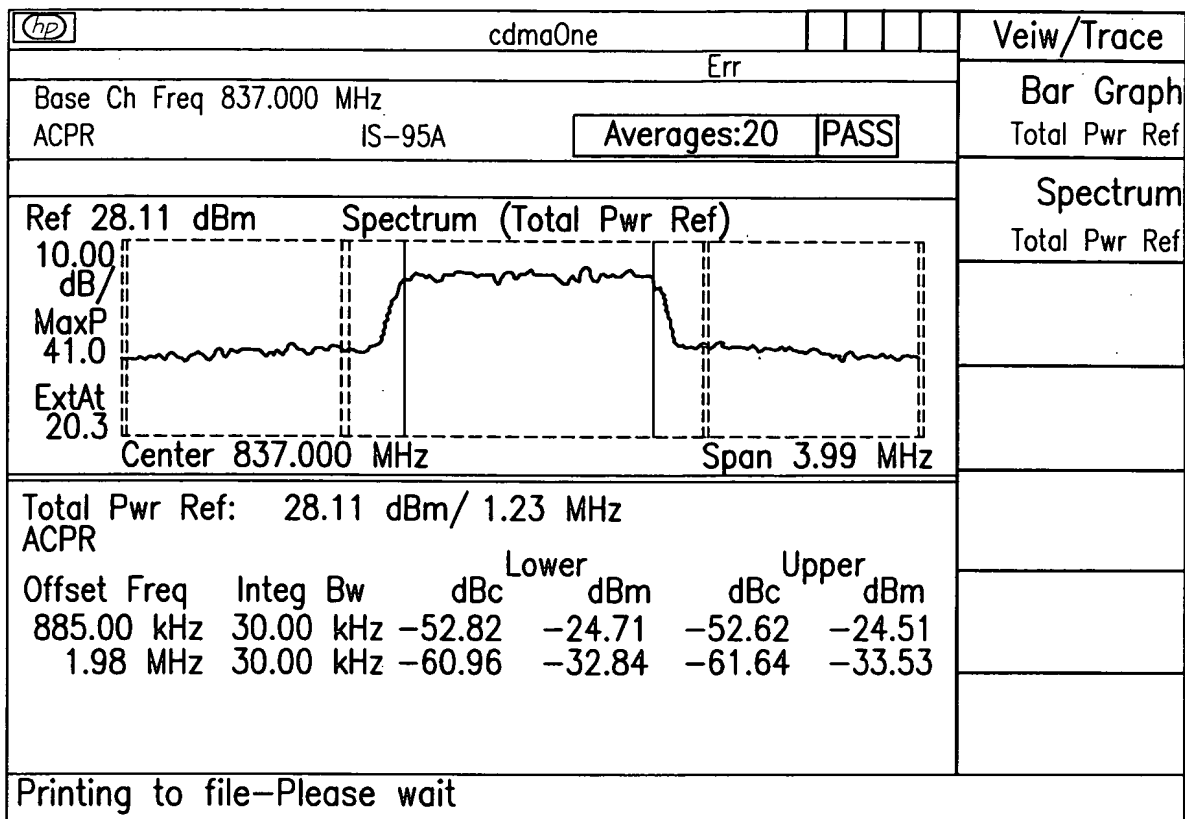
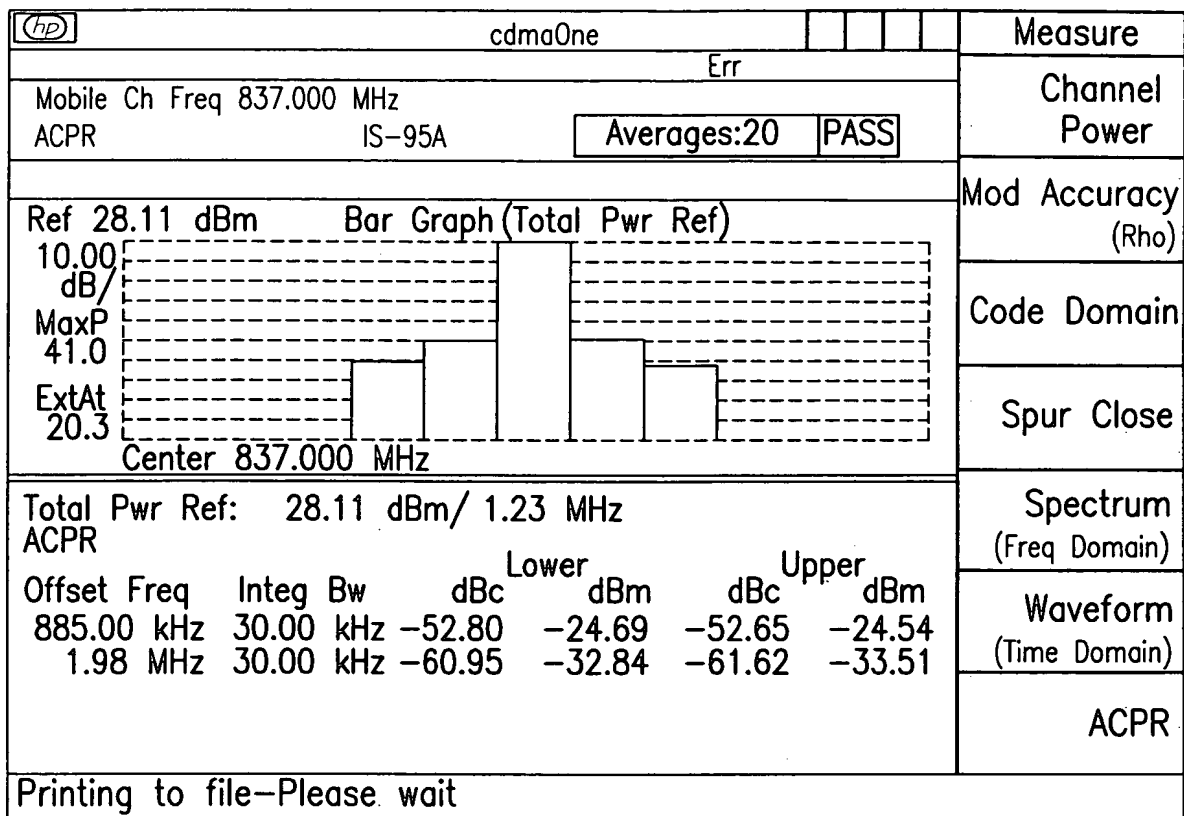


FIG.50

5002

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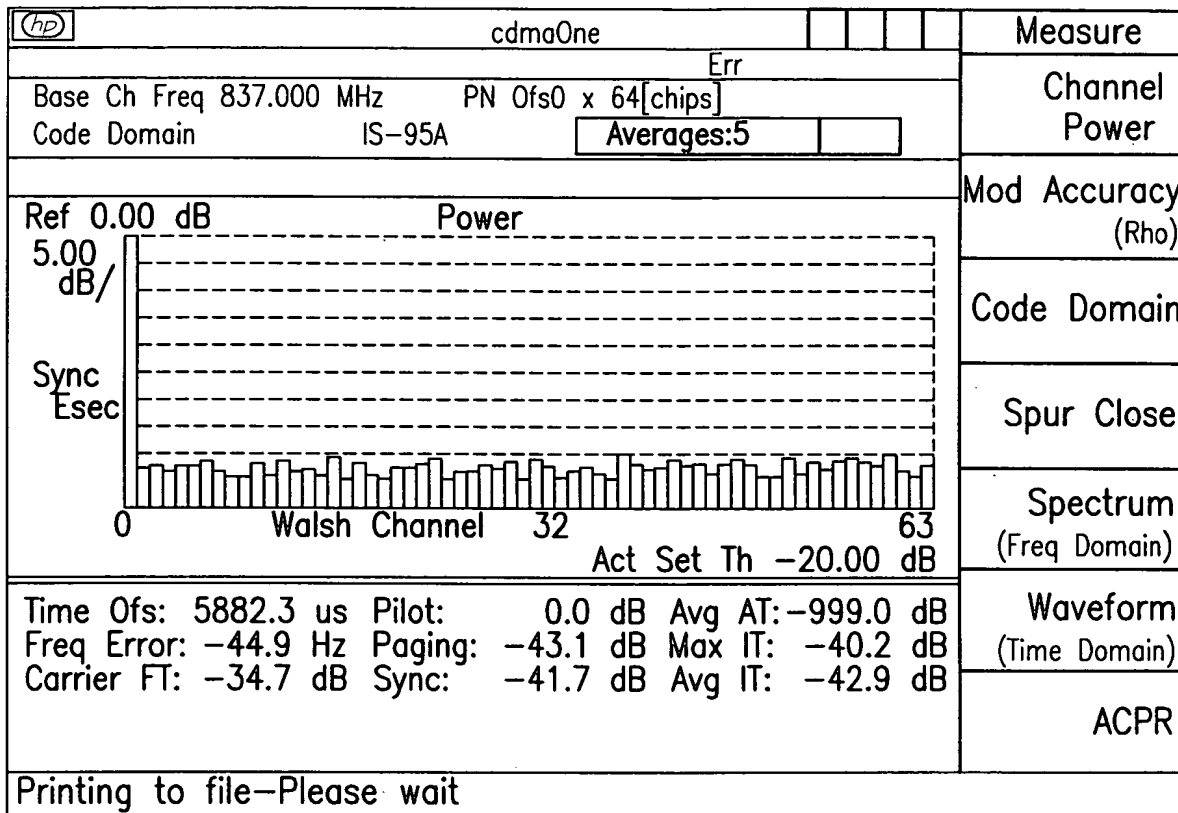


MOBILE STATION SPECTRAL RESPONSE WITH MASK

FIG.51

5102

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CDMA CROSSTALK

FIG.52A

5202

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Sequence For IQ Input Level Variance

CDMA IS-95A

Rho VS SHAPED IQ INPUT LEVEL

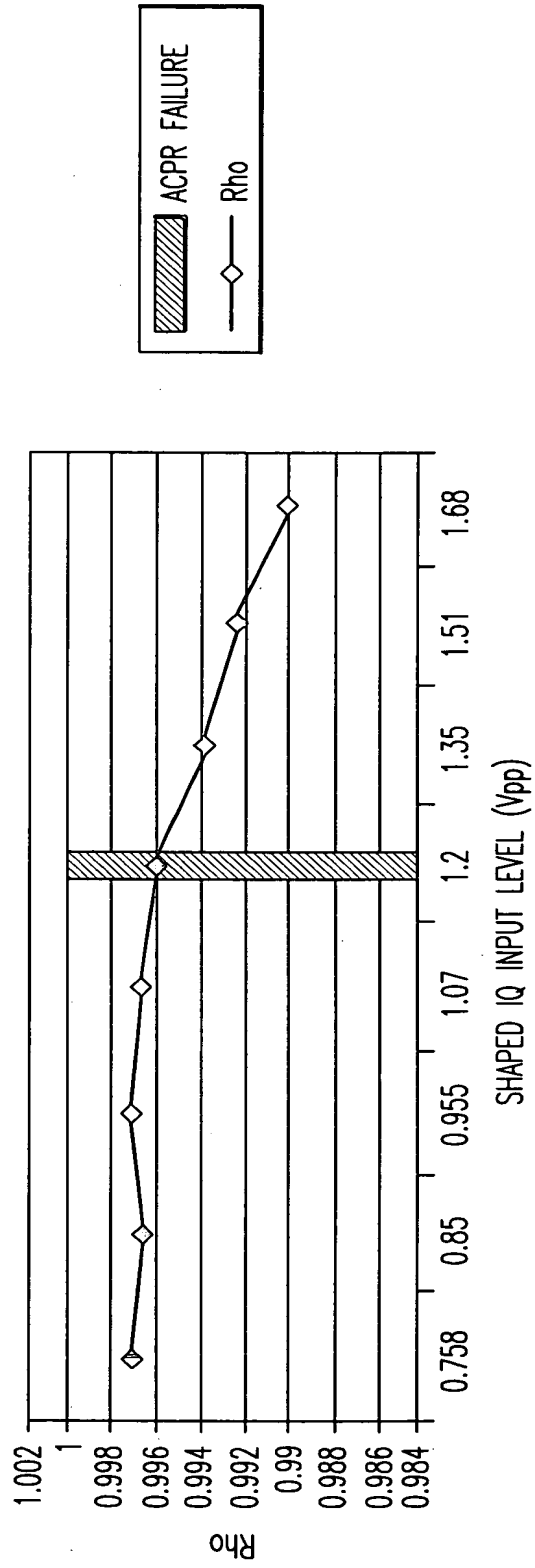


FIG.52B

MAR 13 2006

CDMA IS-95A
TRANSMITTED CHANNEL POWER VS SHAPED IQ INPUT
LEVEL

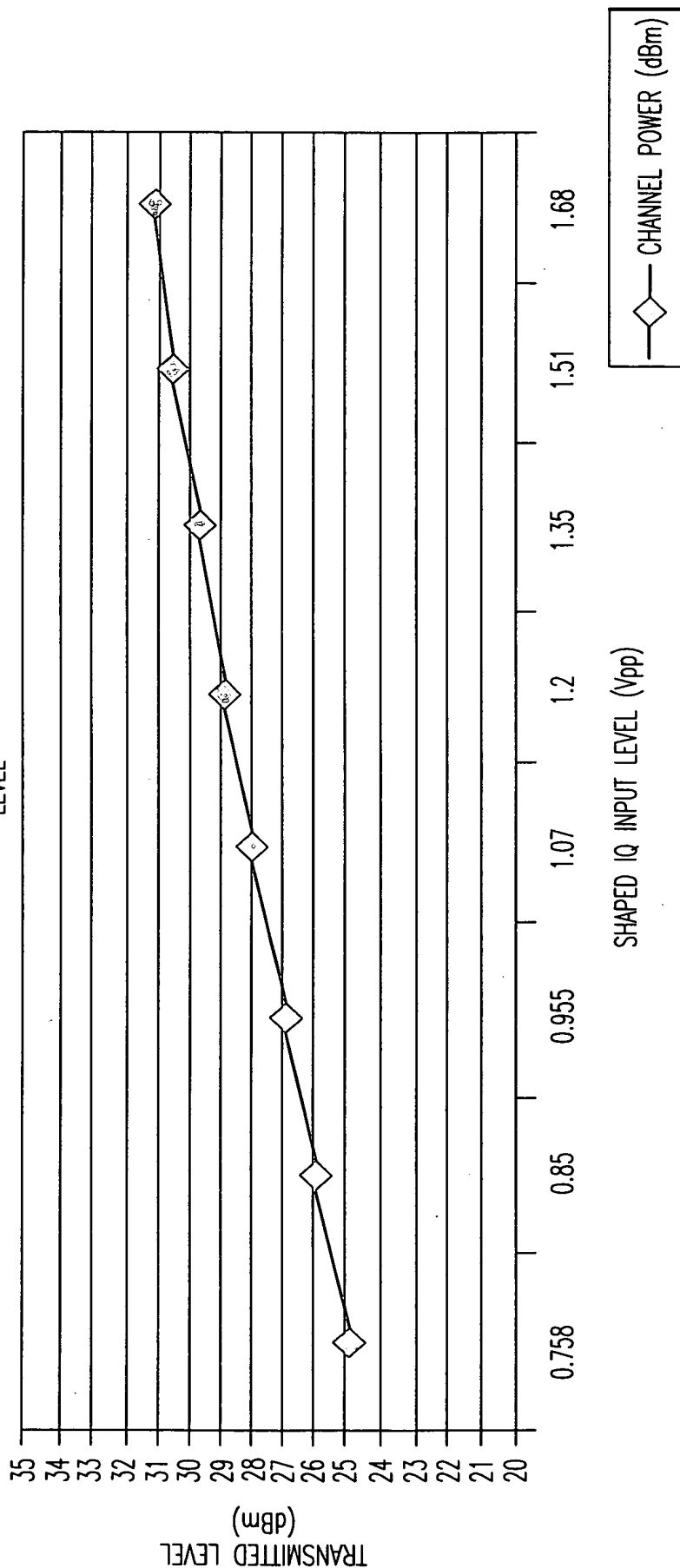


FIG.52C

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CDMA IS-95A
ACPR VS SHAPED IQ INPUT LEVEL

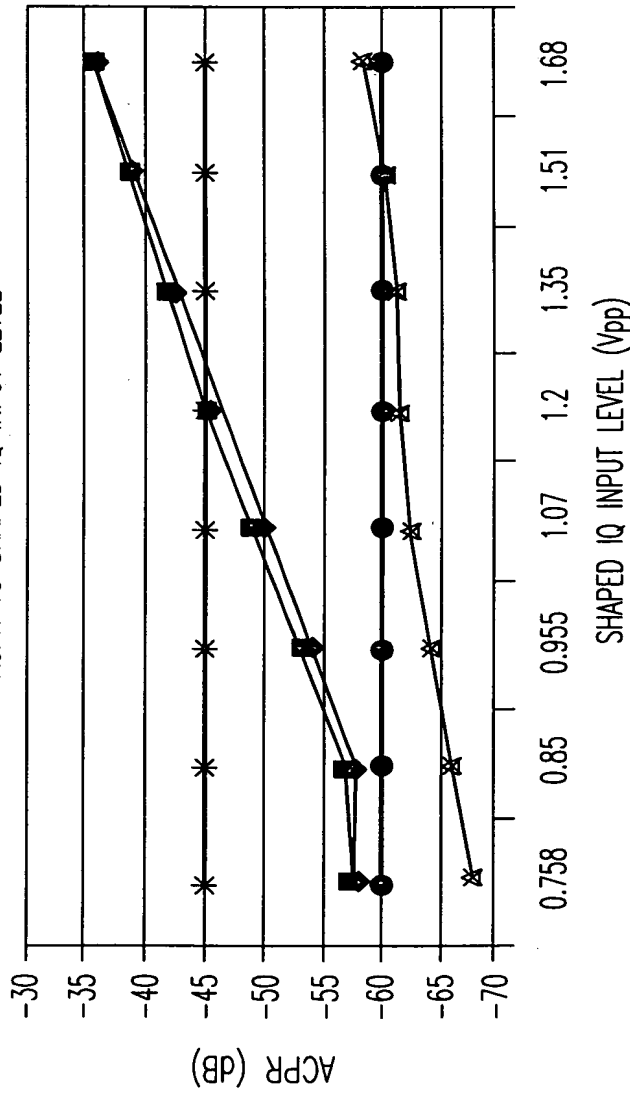


FIG.52D

CDMA IS-95A
EVM AND MAGNITUDE ERROR VS
SHAPED IQ INPUT LEVEL

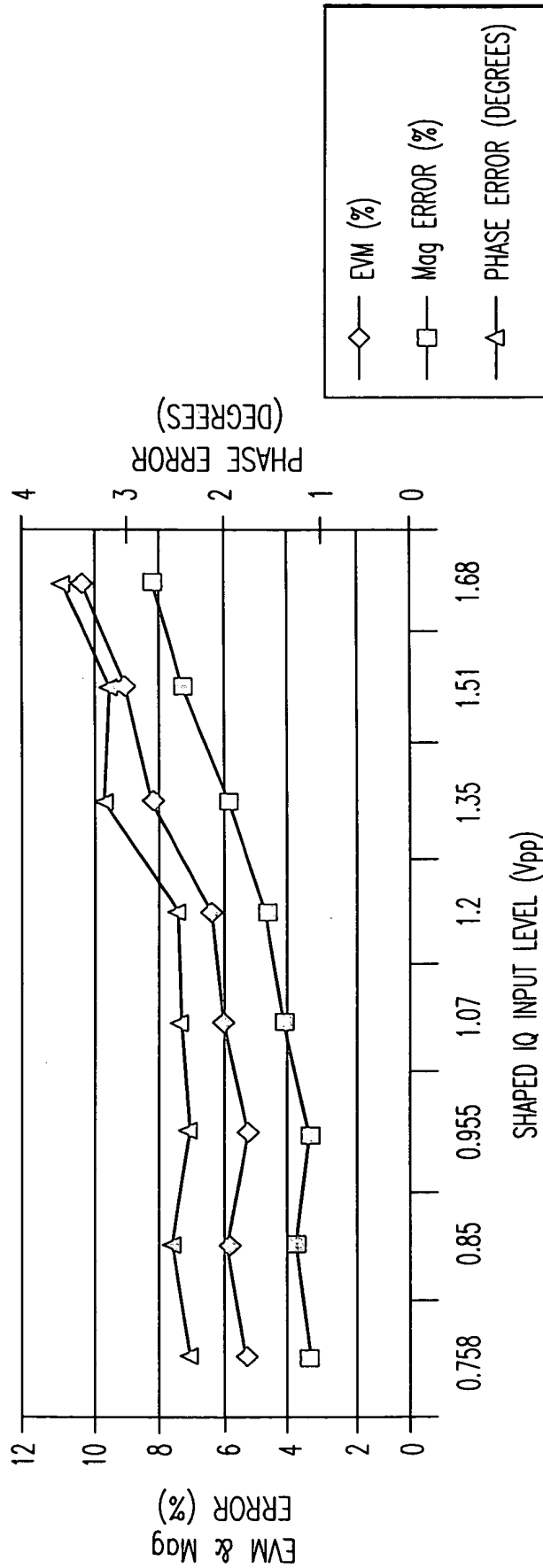


FIG.52E

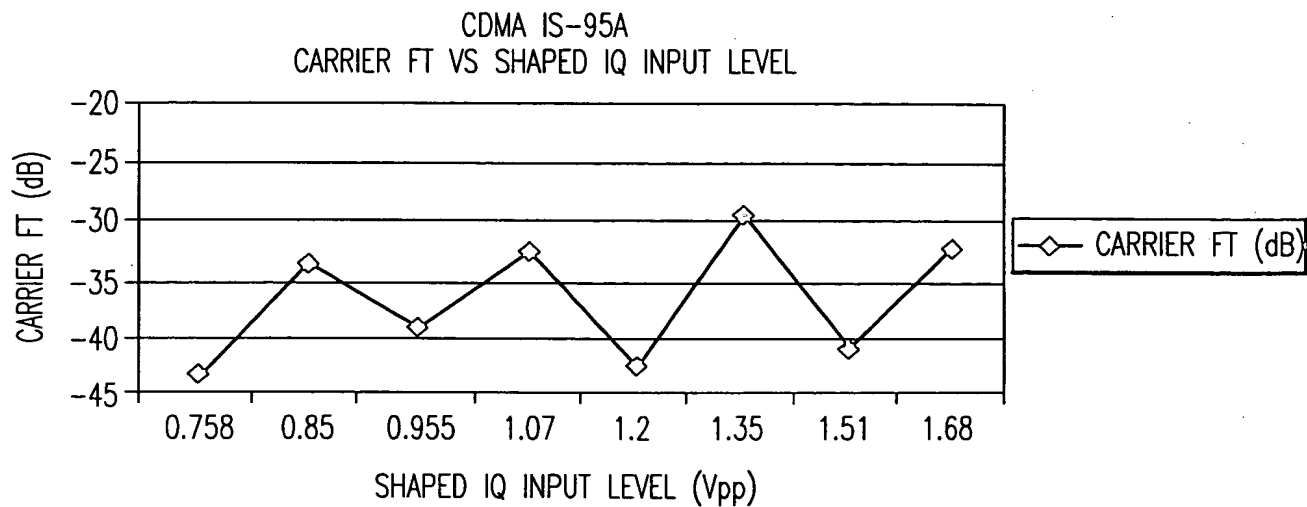


FIG.52F

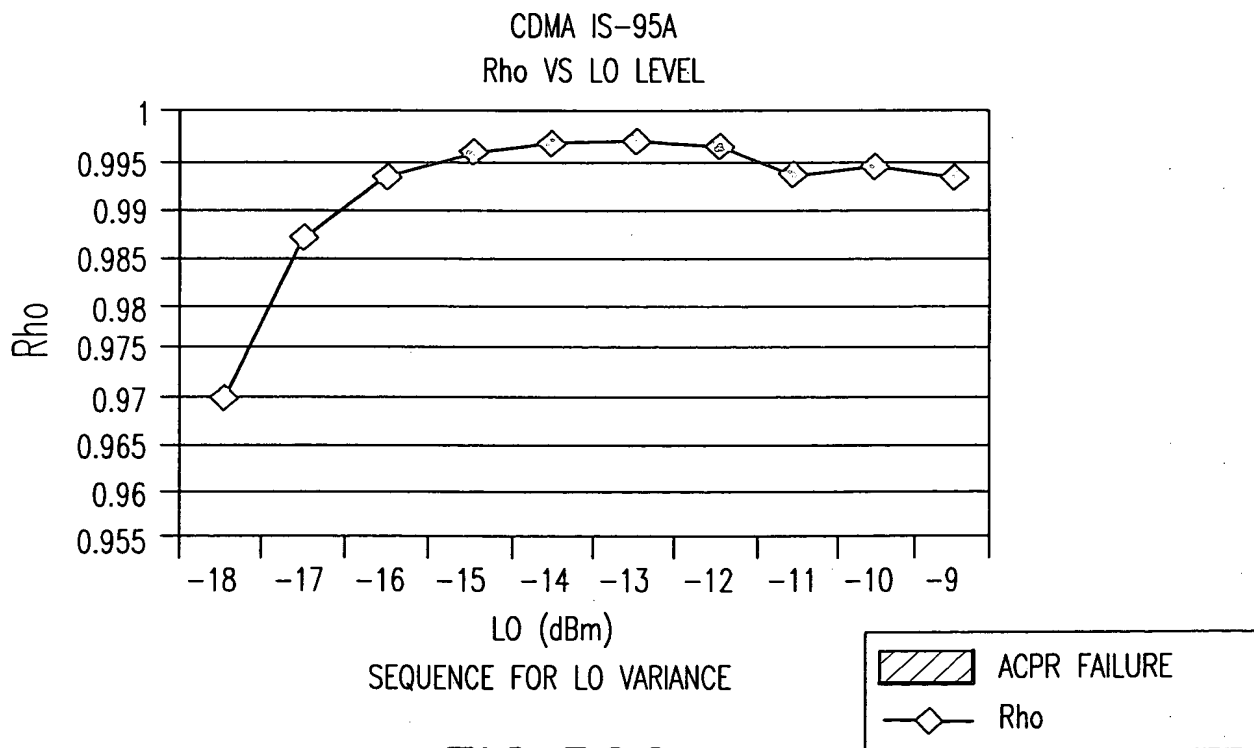


FIG.52G

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CDMA IS-95A
TRANSMITTED CHANNEL POWER VS LO LEVEL

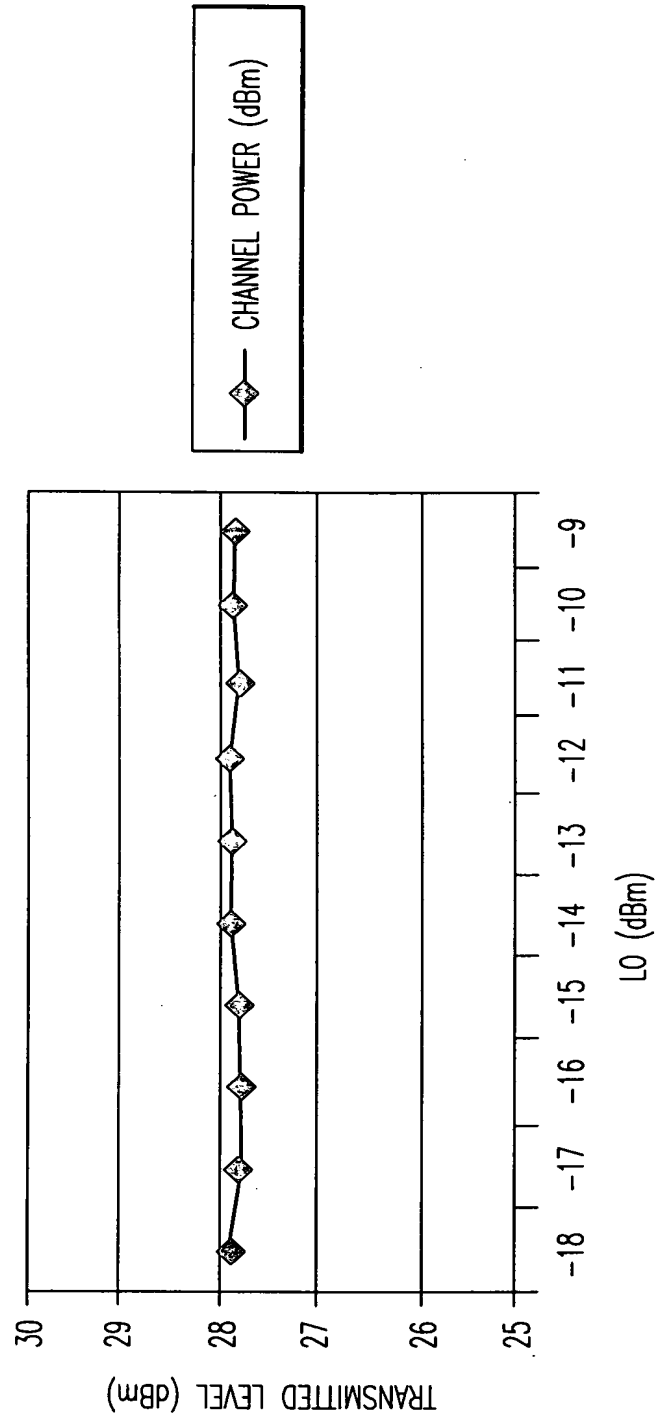


FIG. 52H

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CDMA IS-95A
ACPR vs LO LEVEL

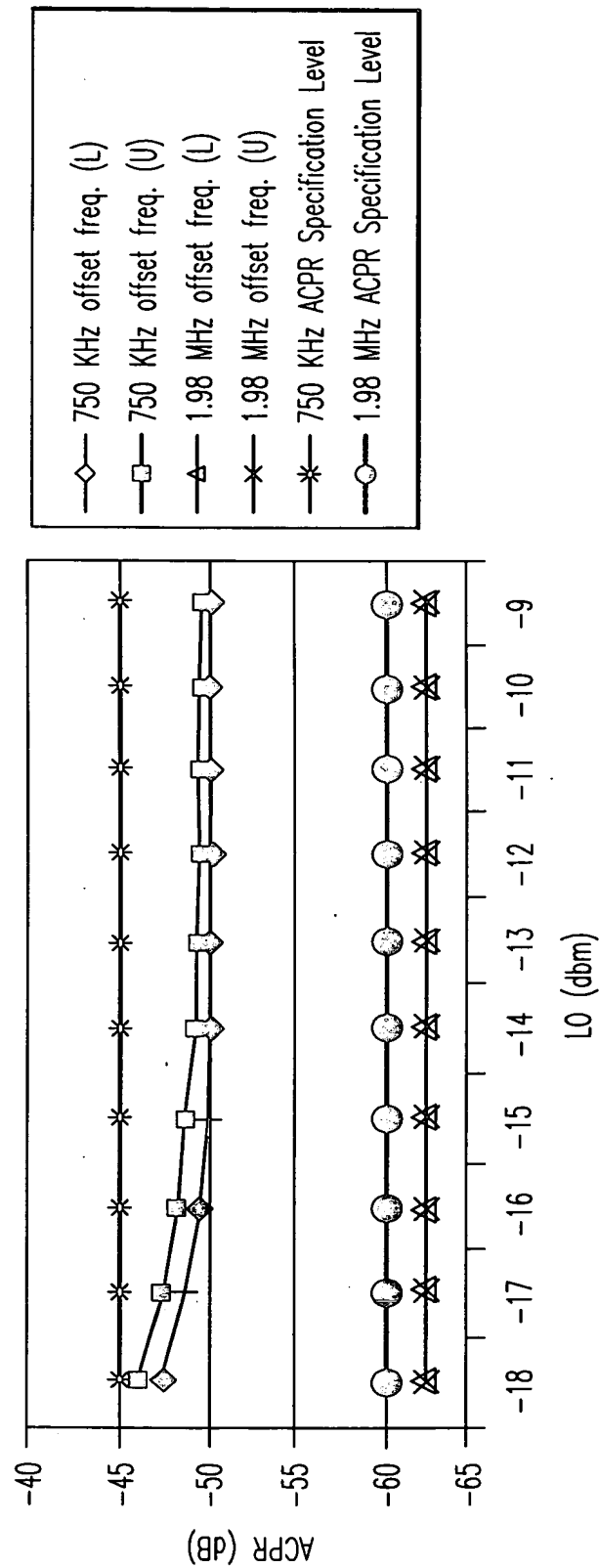


FIG.521

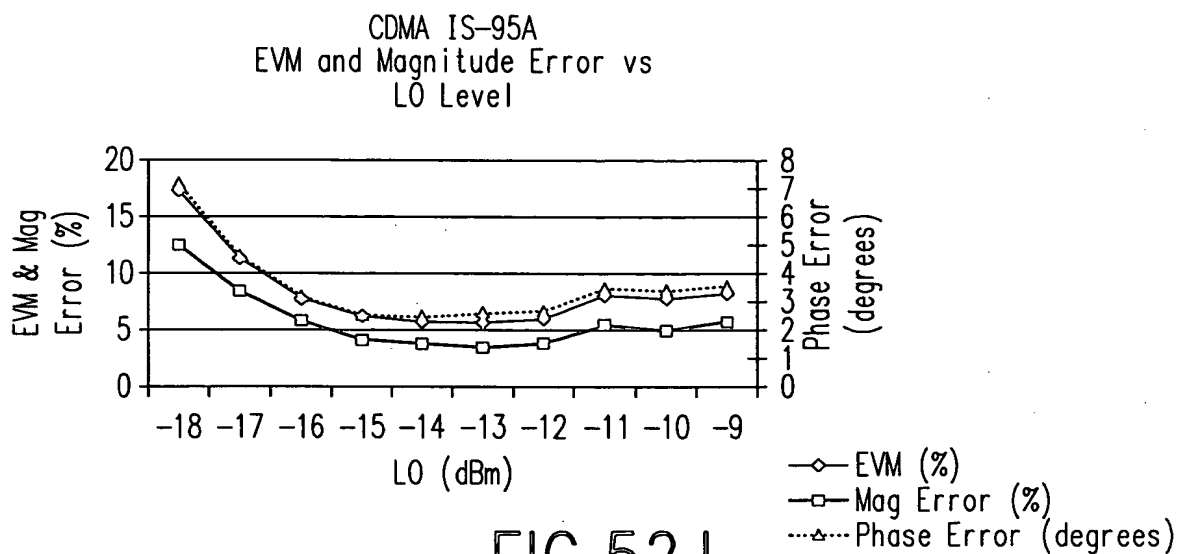


FIG.52J

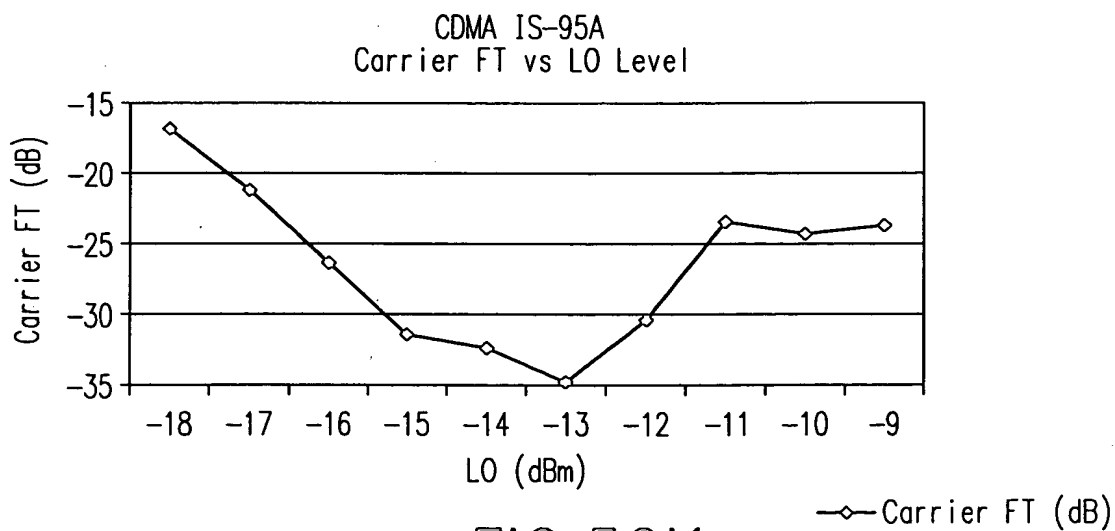


FIG.52K

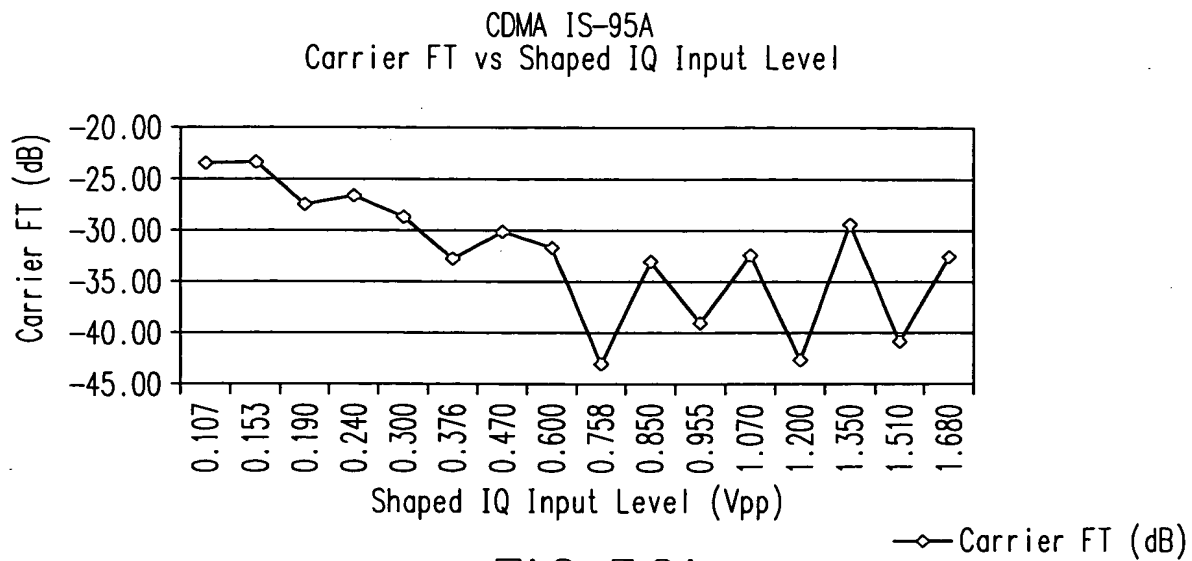
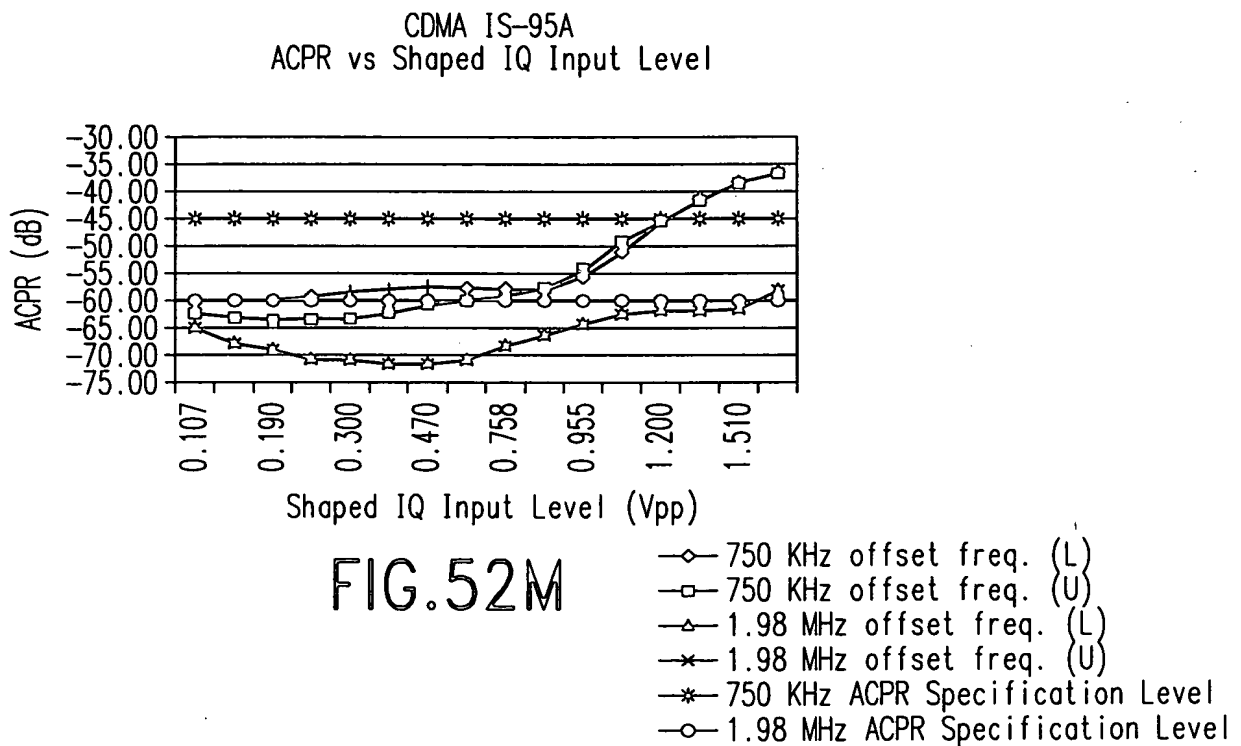


FIG.52L



CDMA IS-95A
Rho vs Shaped IQ Input Level

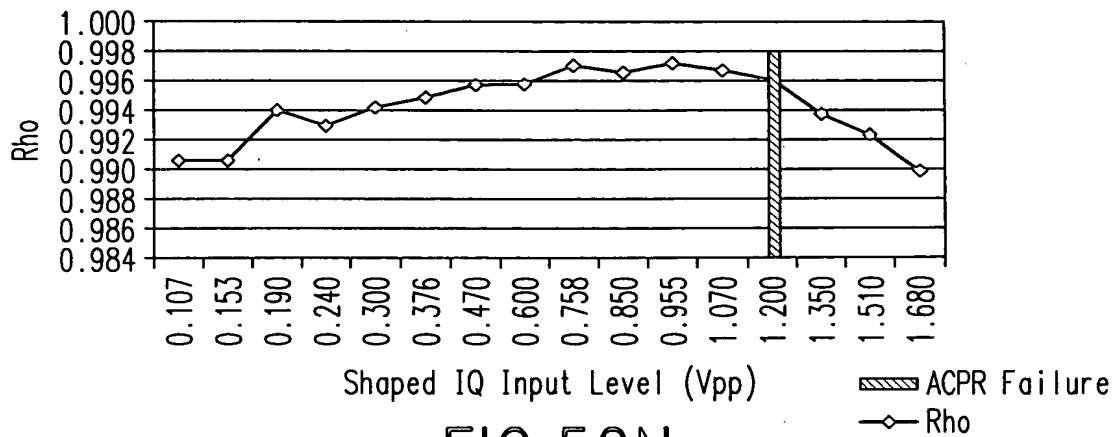


FIG.52N

CDMA IS-95A
EVM, Magnitude Error and Phase Error
vs Shaped IQ Input Level

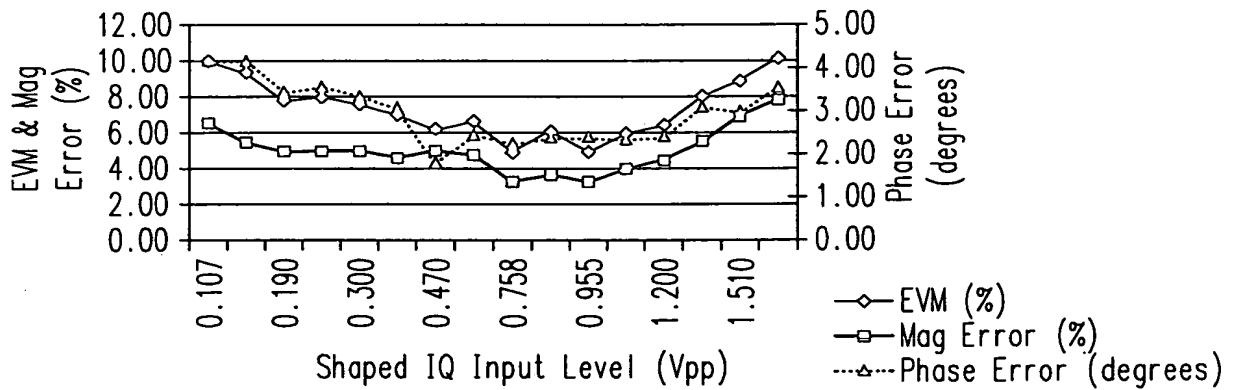


FIG.52O

Sequence For IQ Input Level Variance
 CDMA IS-95A Mobile Transmitter@3.3V
 Rho vs Shaped IQ Input Level

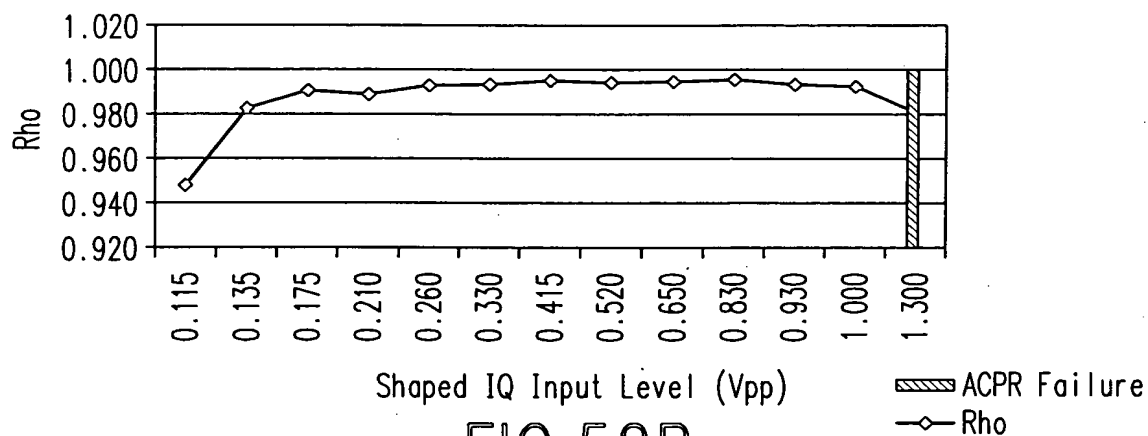


FIG.52P

CDMA IS-95A Mobile Transmitter@3.3V
 Transmitted Channel Power vs Shaped IQ Input Level

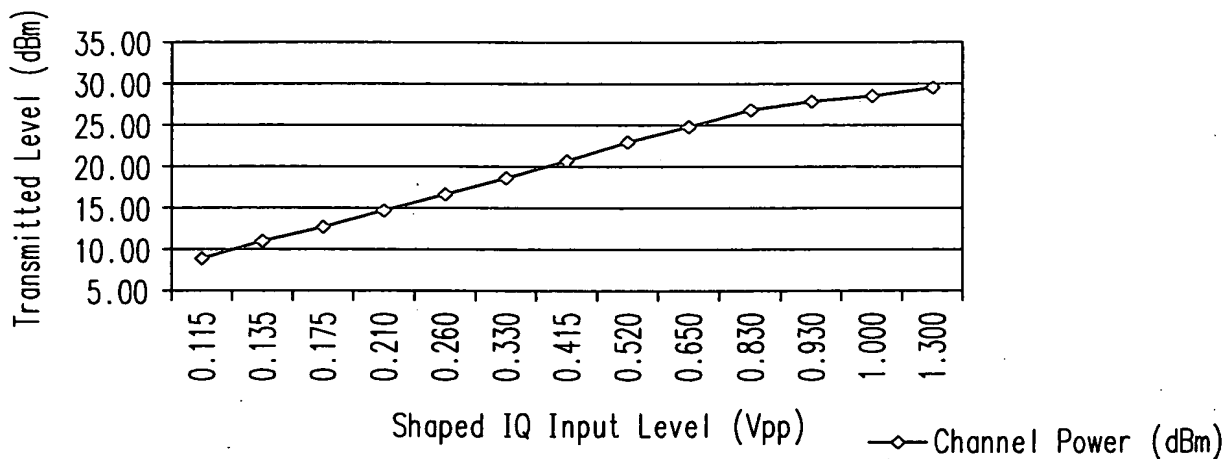


FIG.52Q

CDMA IS-95A Mobile Transmitter@+3.3V
ACPR vs Shaped IQ Input Level

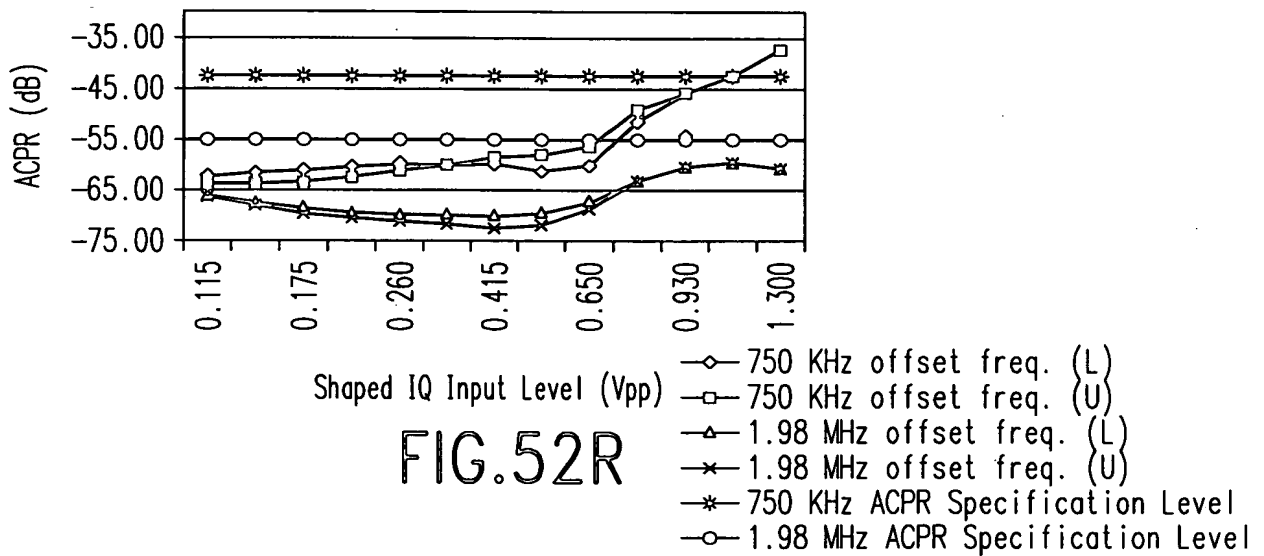


FIG.52R

CDMA IS-95A Mobile Transmitter@+3.3V
EVM, Magnitude Error and Phase Error
vs Shaped IQ Input Level

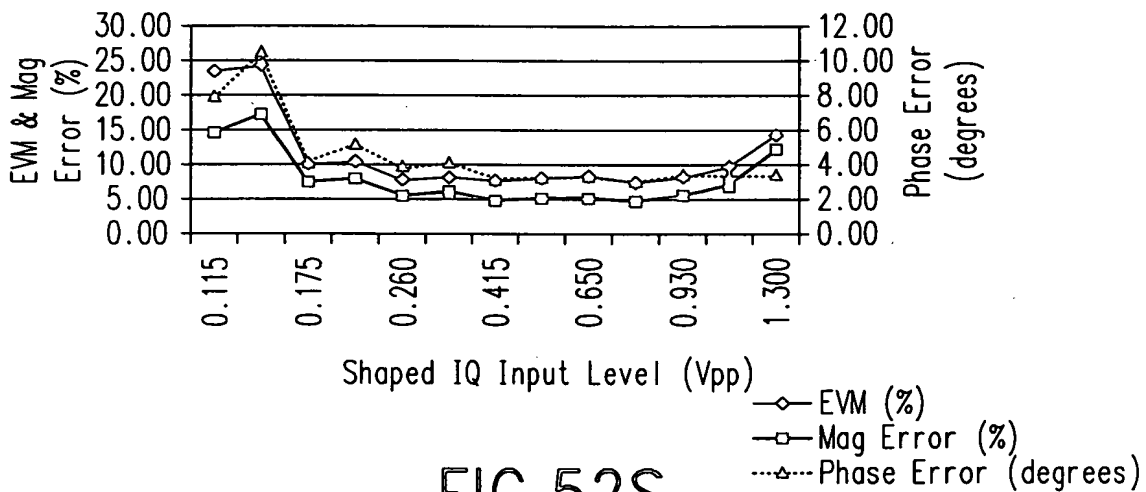


FIG.52S

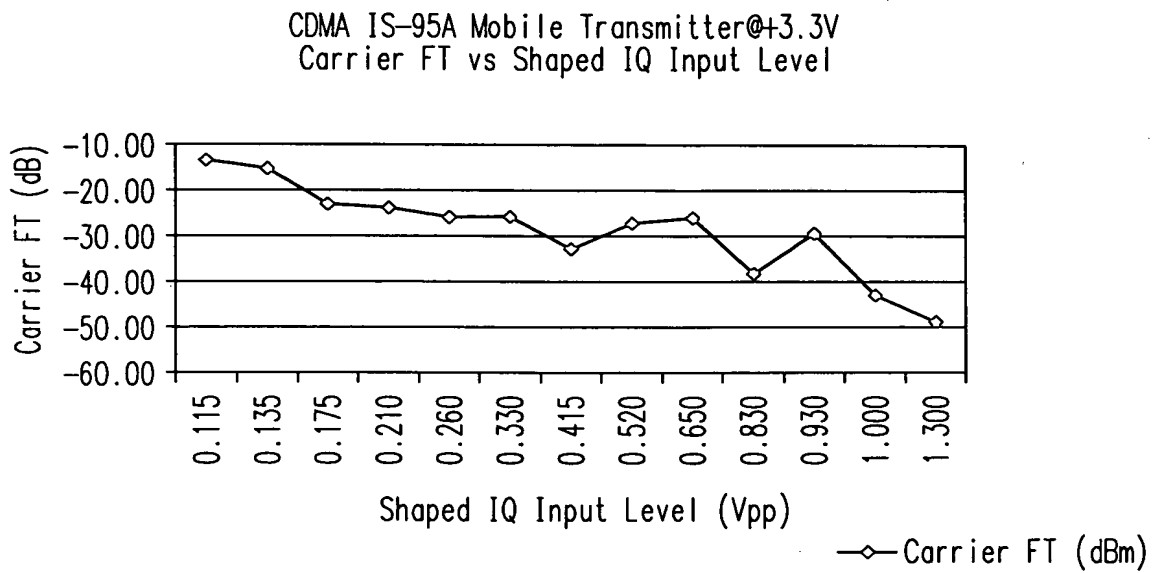


FIG.52T

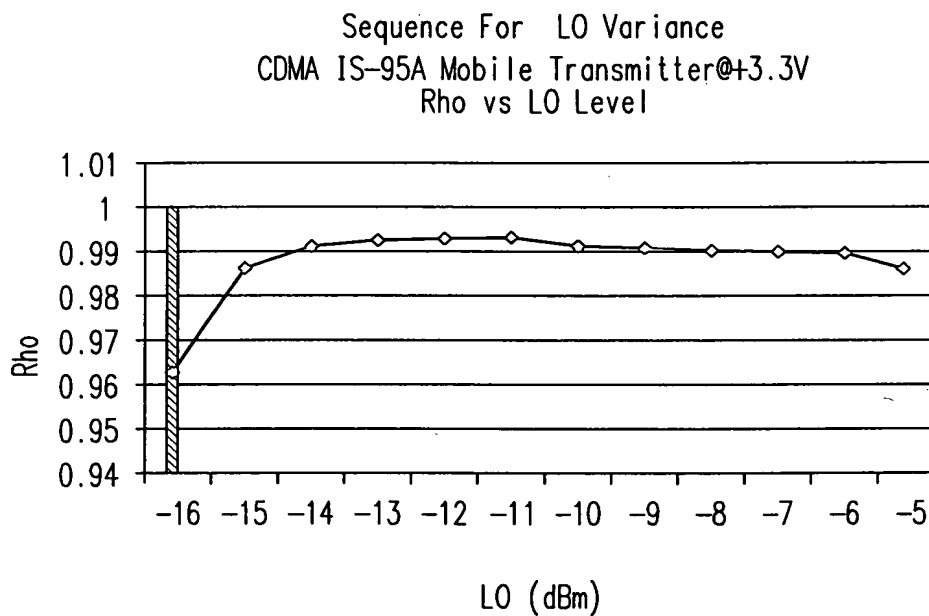


FIG.52U

ACPR-Failure
Rho

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CDMA IS-95A Mobile Transmitter@+3.3V
Transmitted Channel Power vs LO Level

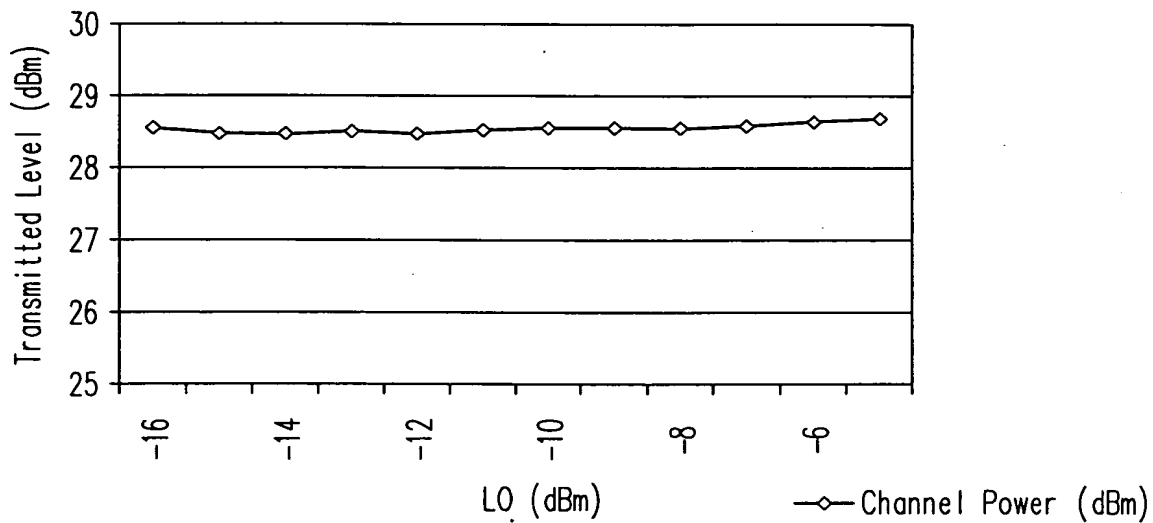


FIG.52V

CDMA IS-95A Mobile Transmitter@+3.3V
ACPR vs LO Level

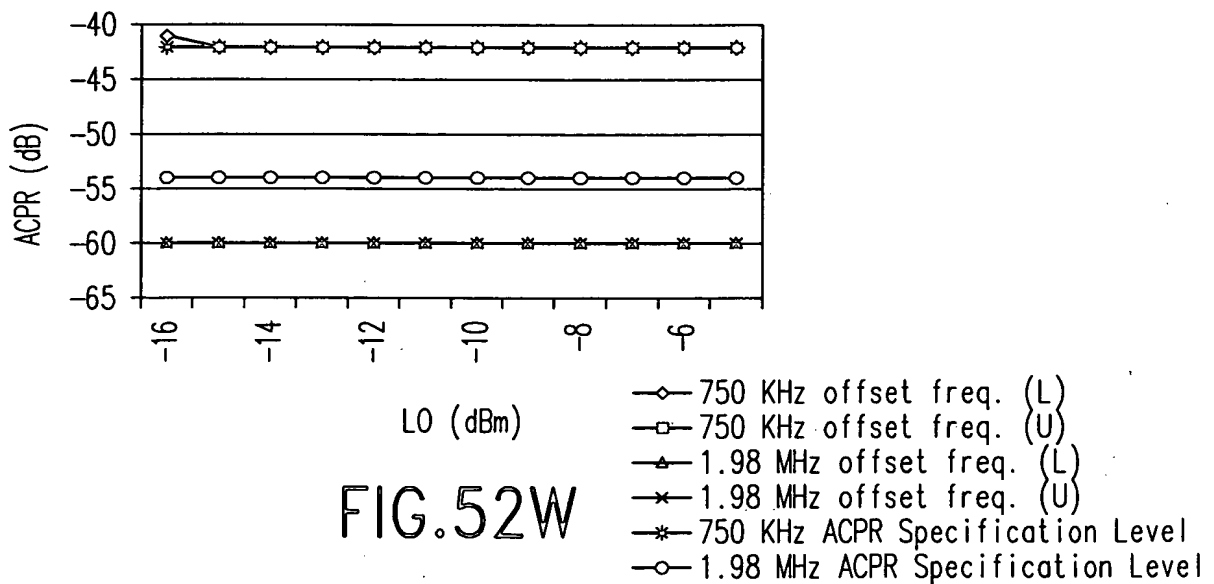


FIG.52W

CDMA IS-95A Mobile Transmitter@+3.3V
EVM and Magnitude Error vs
LO Level

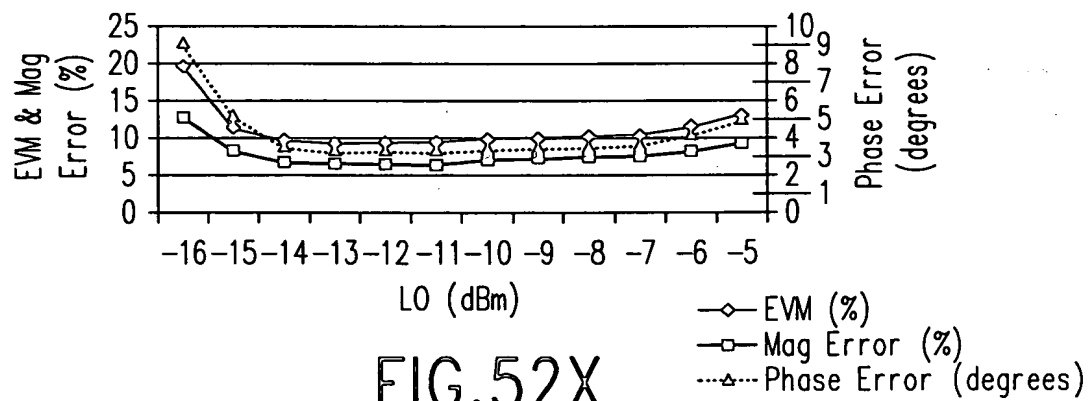


FIG.52X

CDMA IS-95A Mobile Transmitter@+3.3V
Carrier FT vs LO Level

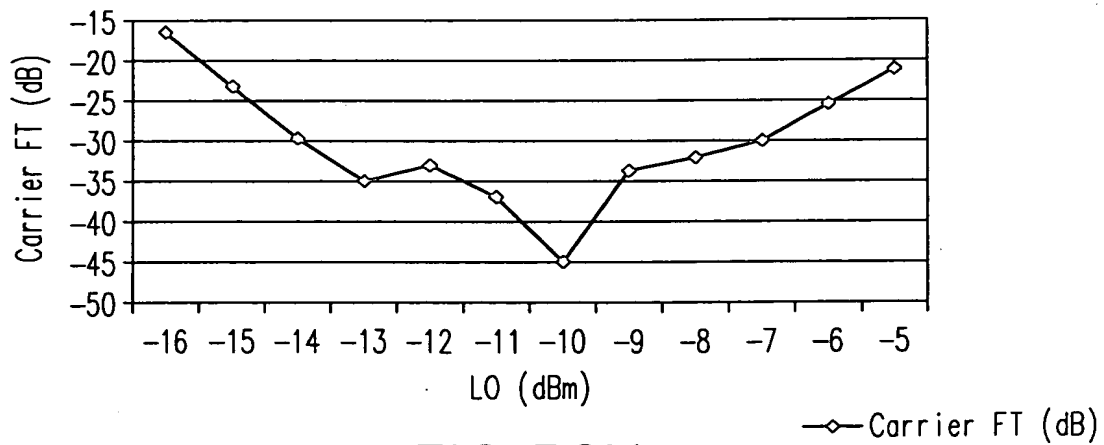


FIG.52Y

QUANTITY	DESCRIPTION	VOLTAGE	TOTAL CURRENT	POWER
2	CORES	3.3	4mA	13.2mW
2	BASEBAND INTERFACE CIRCUITS WITH/BW LIMIT	3.3	6mA	21.8mW
1	CLOCK CIRCUIT	3.3	5mA	20.0mW
			SUB TOTAL	54.0mW

FIG.52Z

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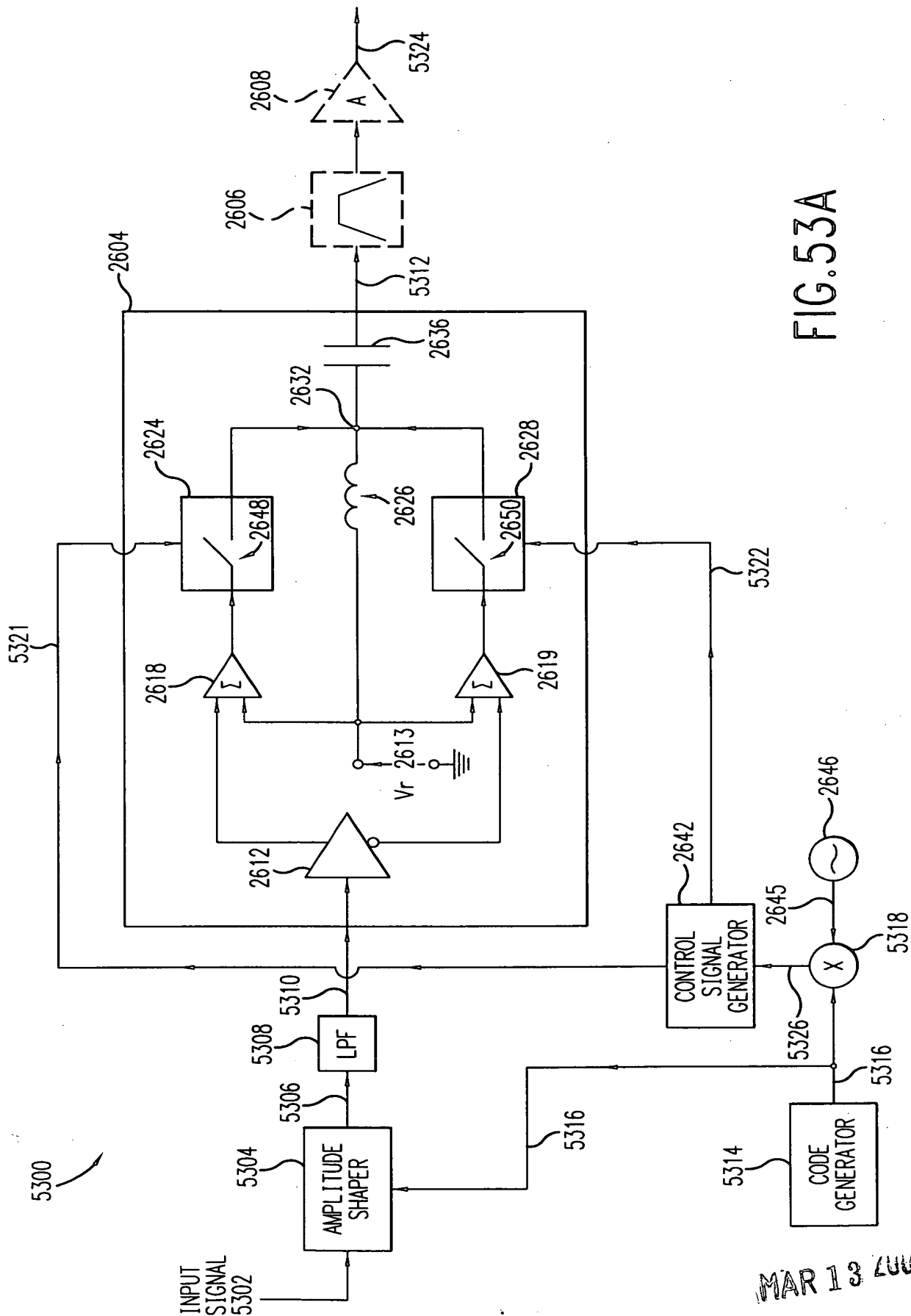


FIG. 53A

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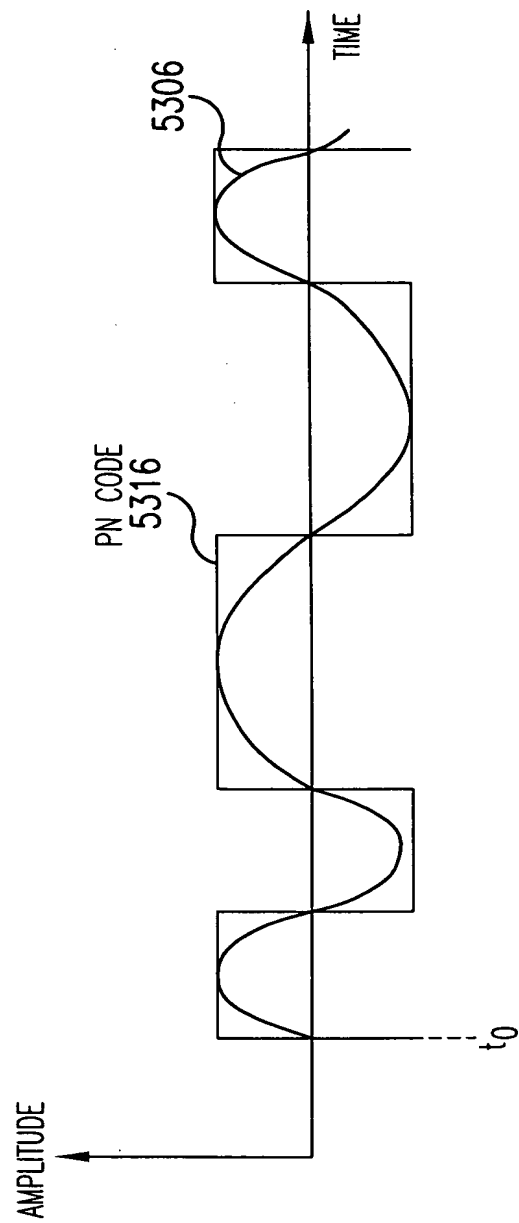


FIG. 53B

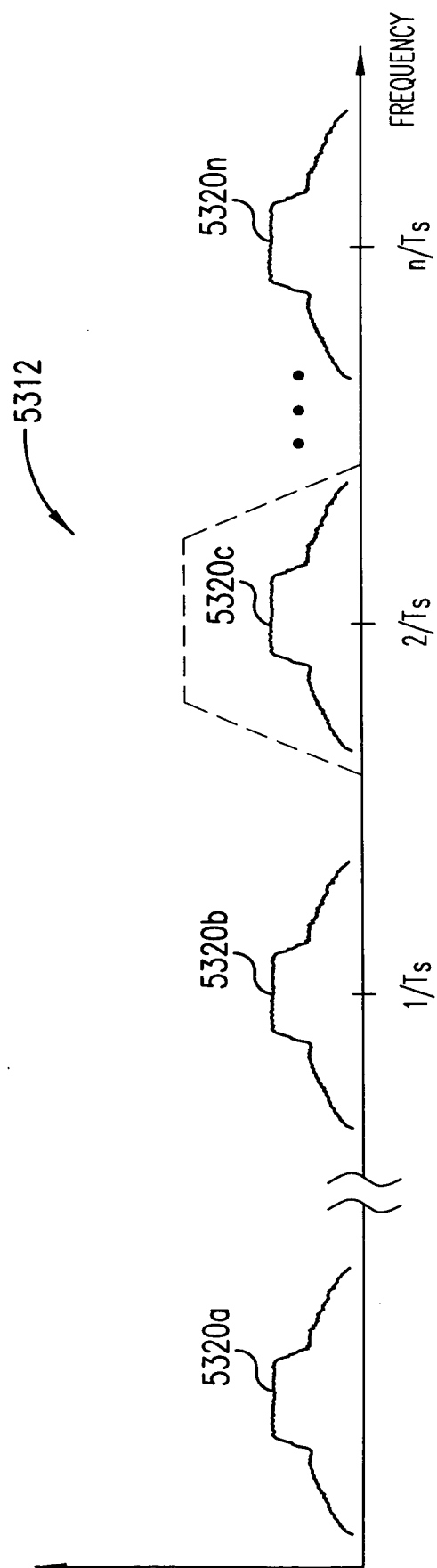


FIG.53C

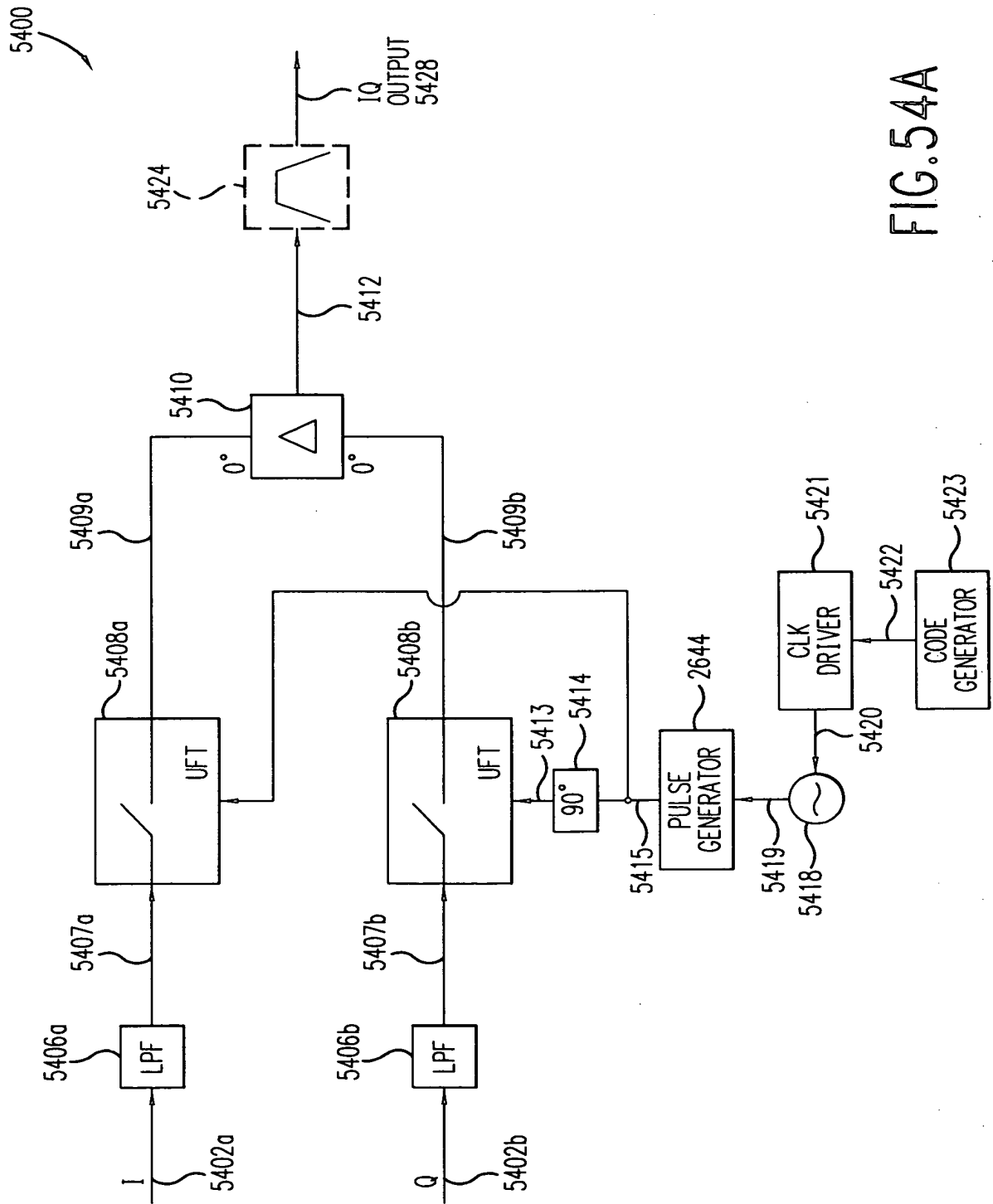


FIG. 54A

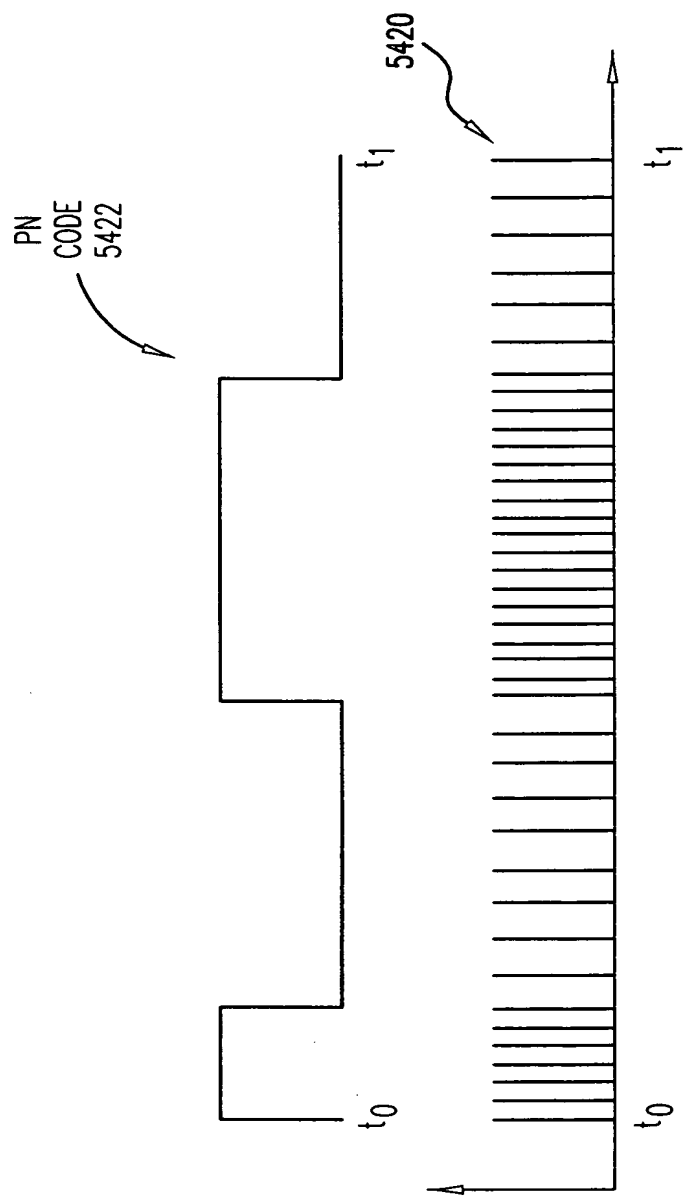


FIG. 54B

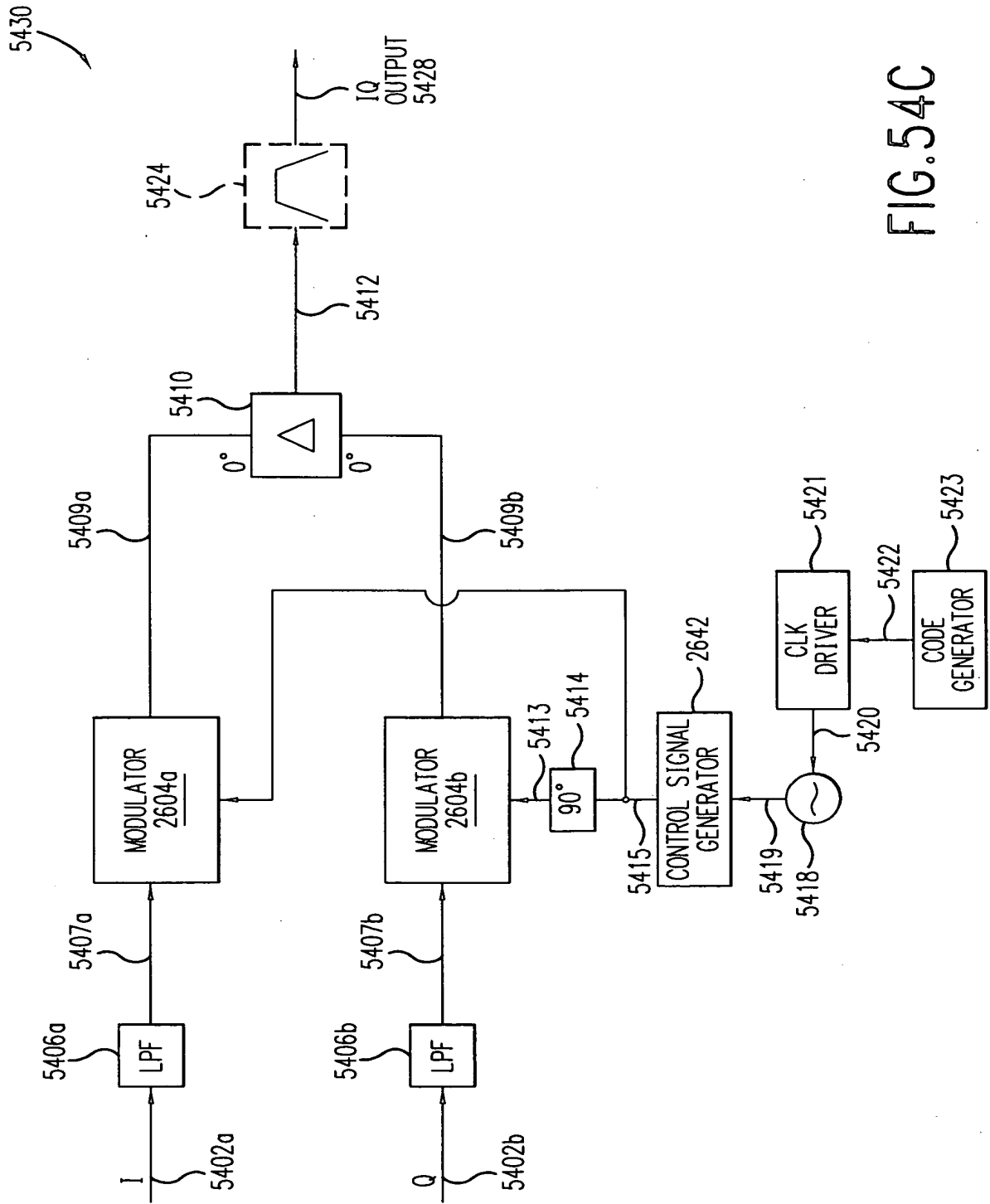


FIG. 54C

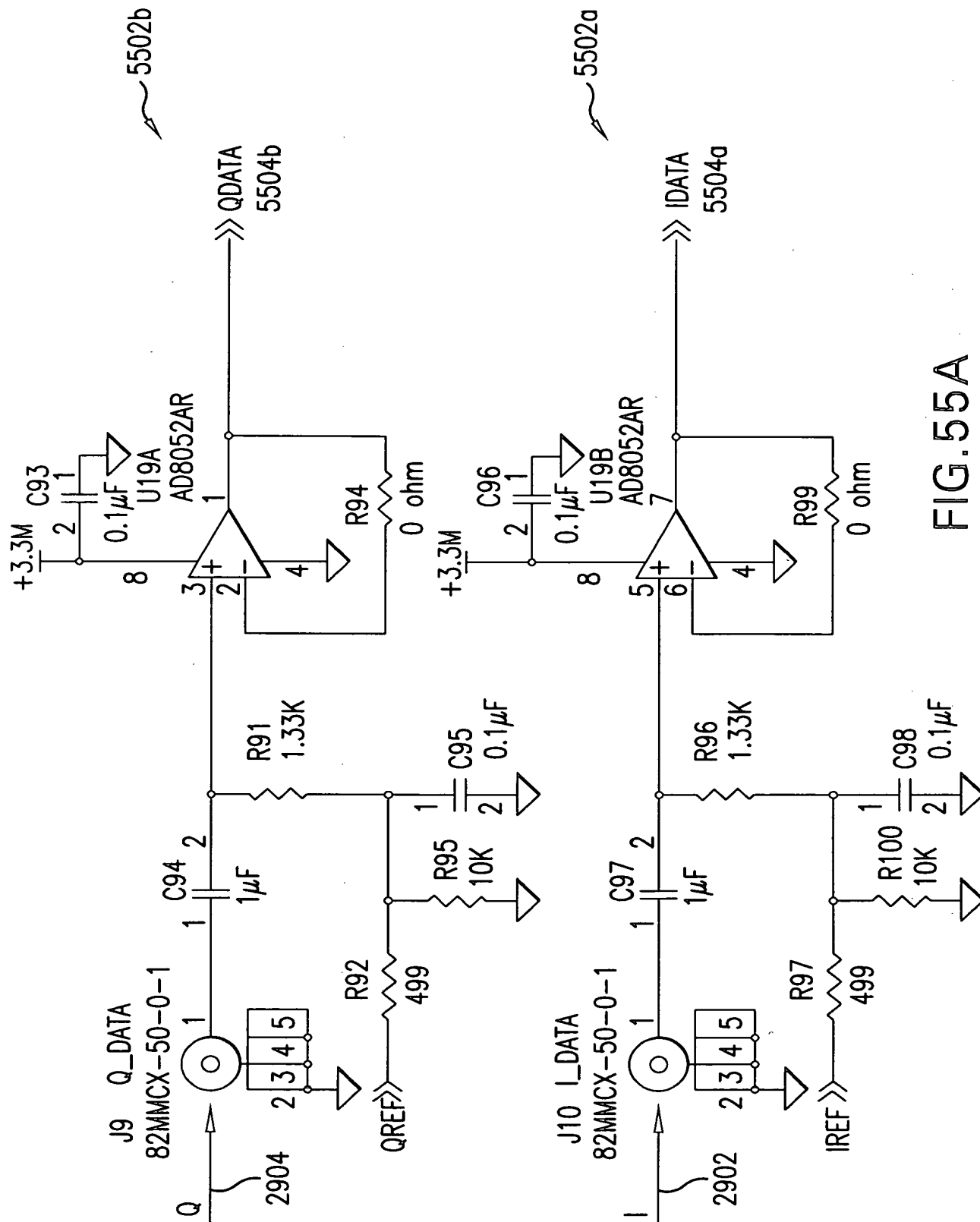


FIG. 55A

FIG.55 B-1	FIG.55 B-2	FIG.55 B-3	FIG.55 B-4
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FIG.55B

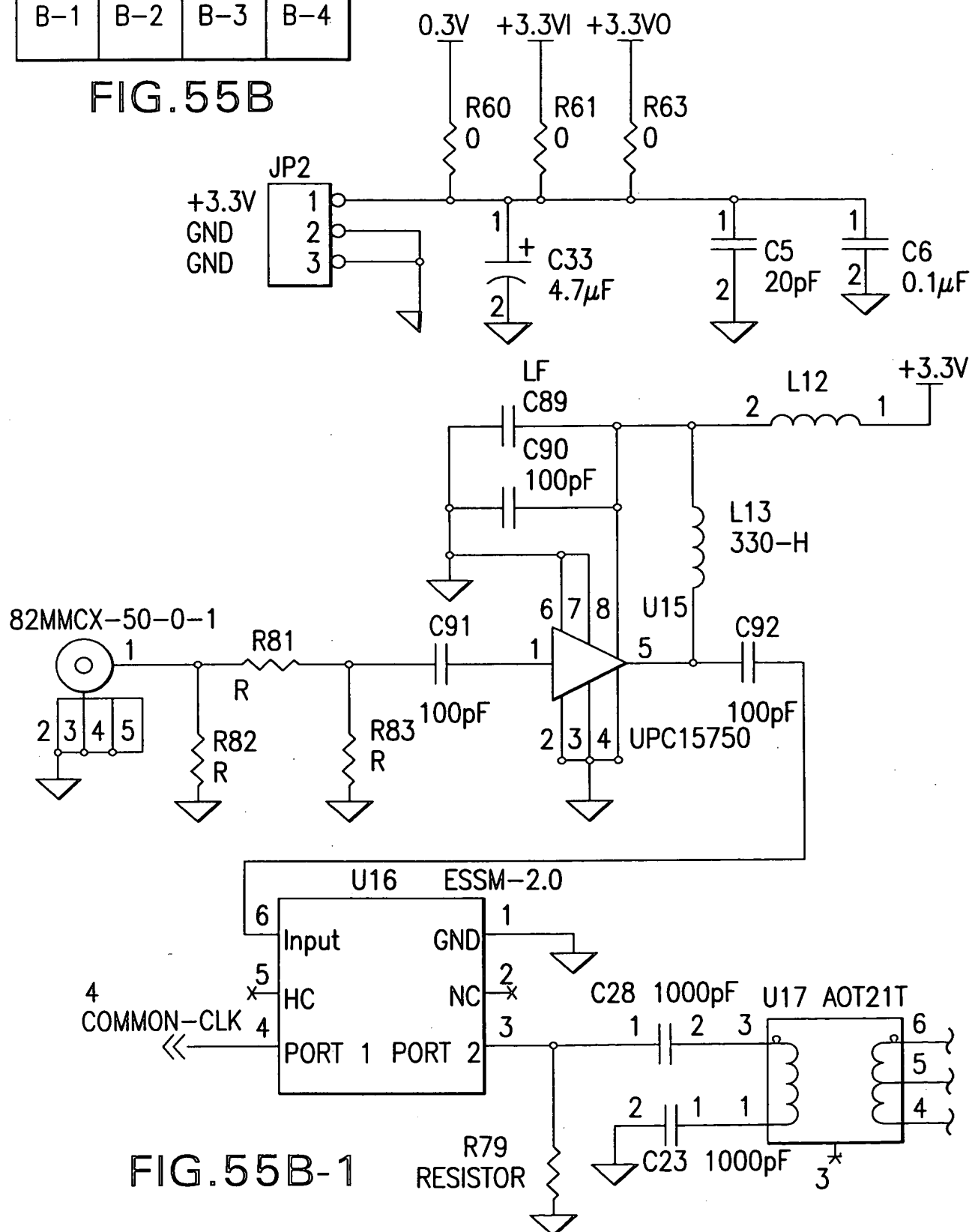


FIG.55B-1

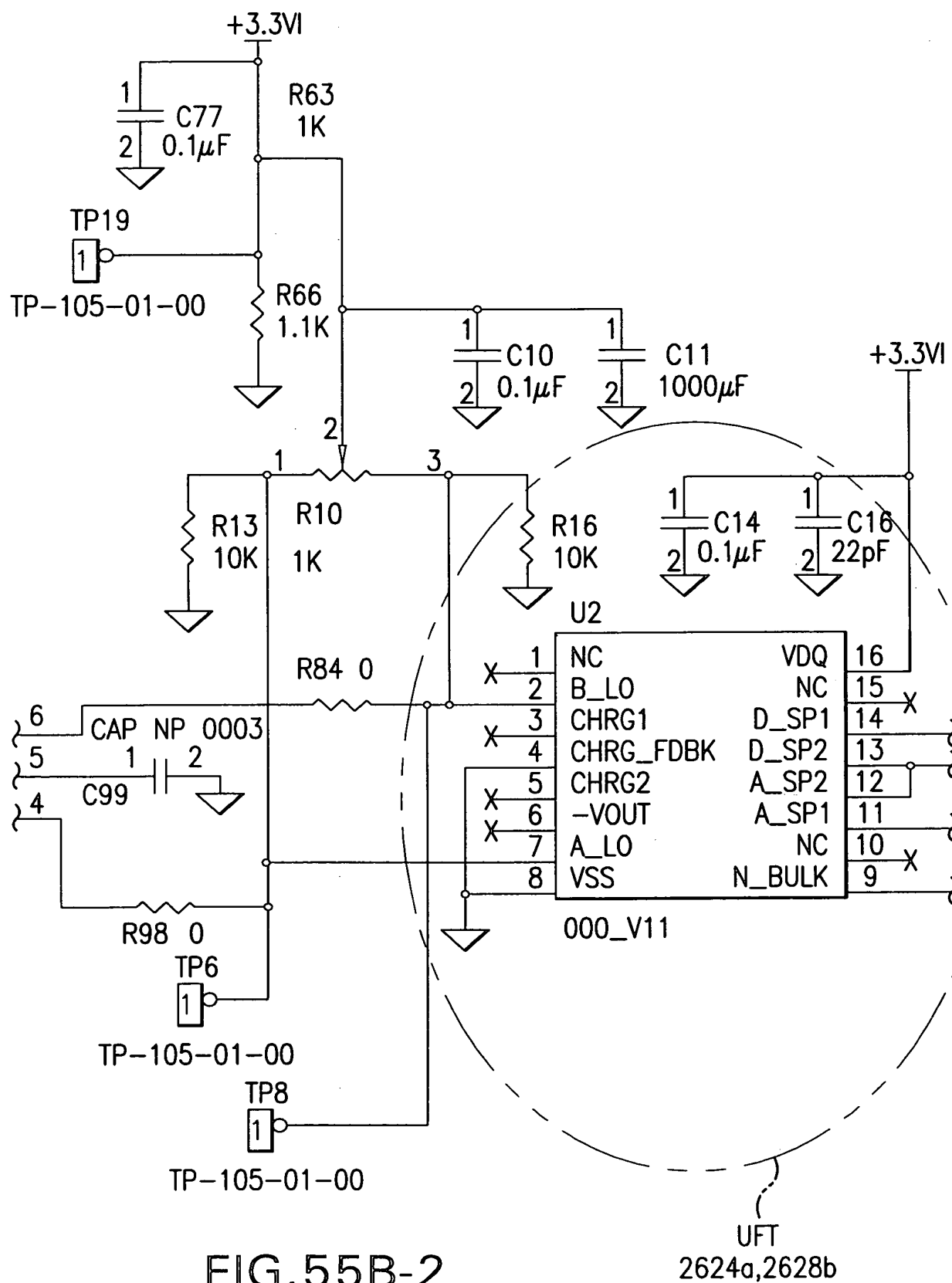


FIG.55B-2

MAR 13 2006

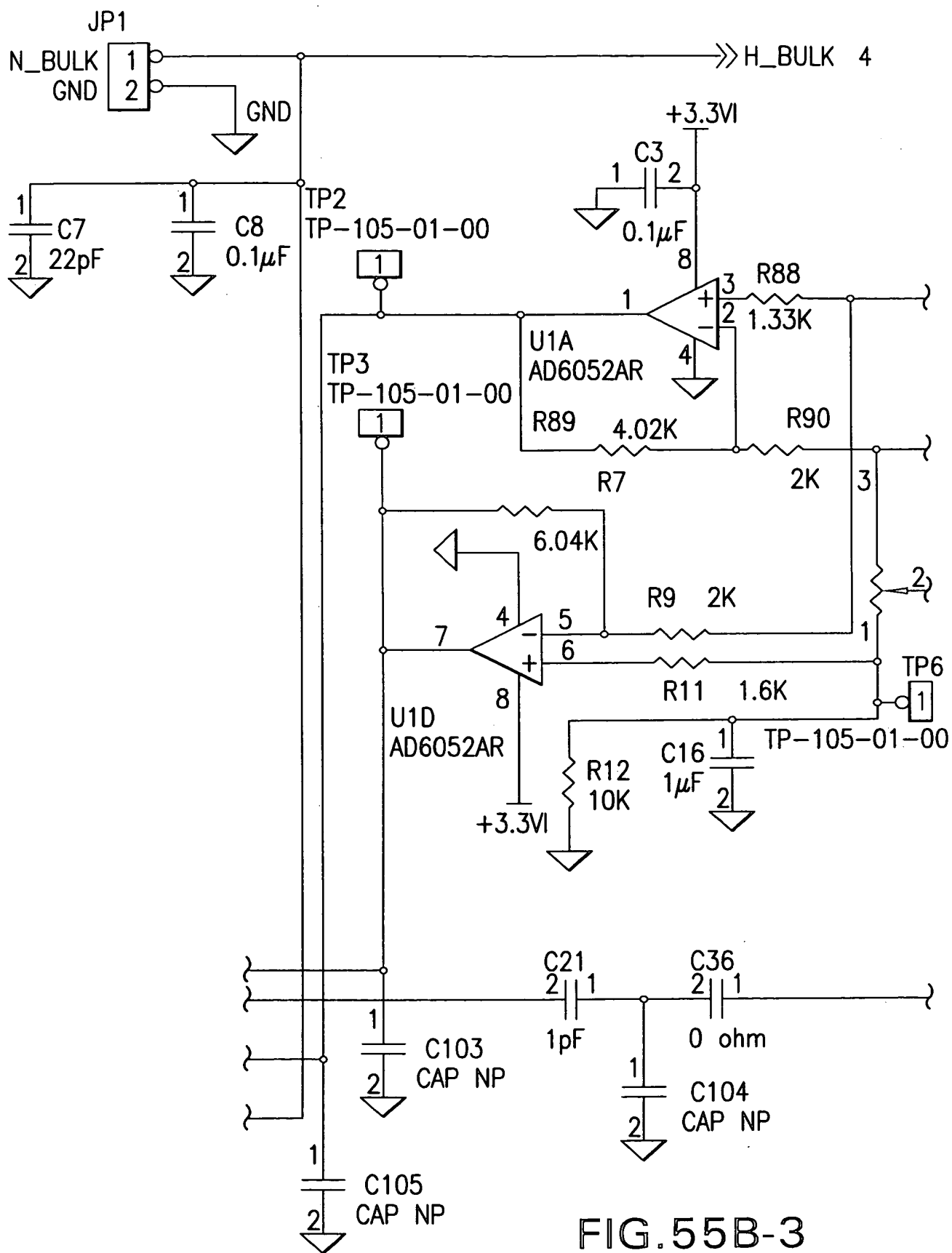


FIG.55B-3

MAR 13 2006

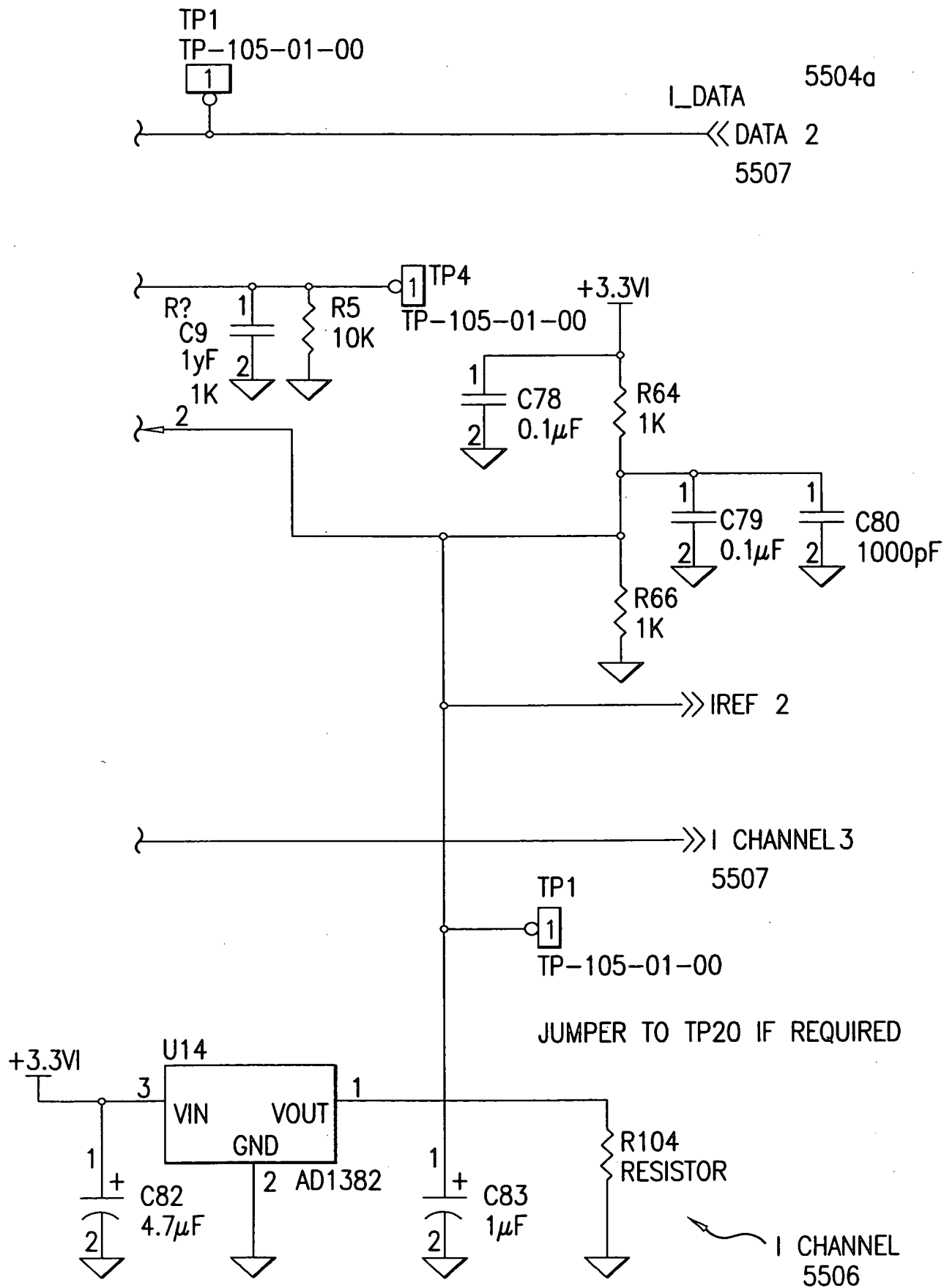


FIG. 55B-4

MAR 13 2006

FIG.55C-1	FIG.55C-2
FIG.55C-3	

FIG.55C

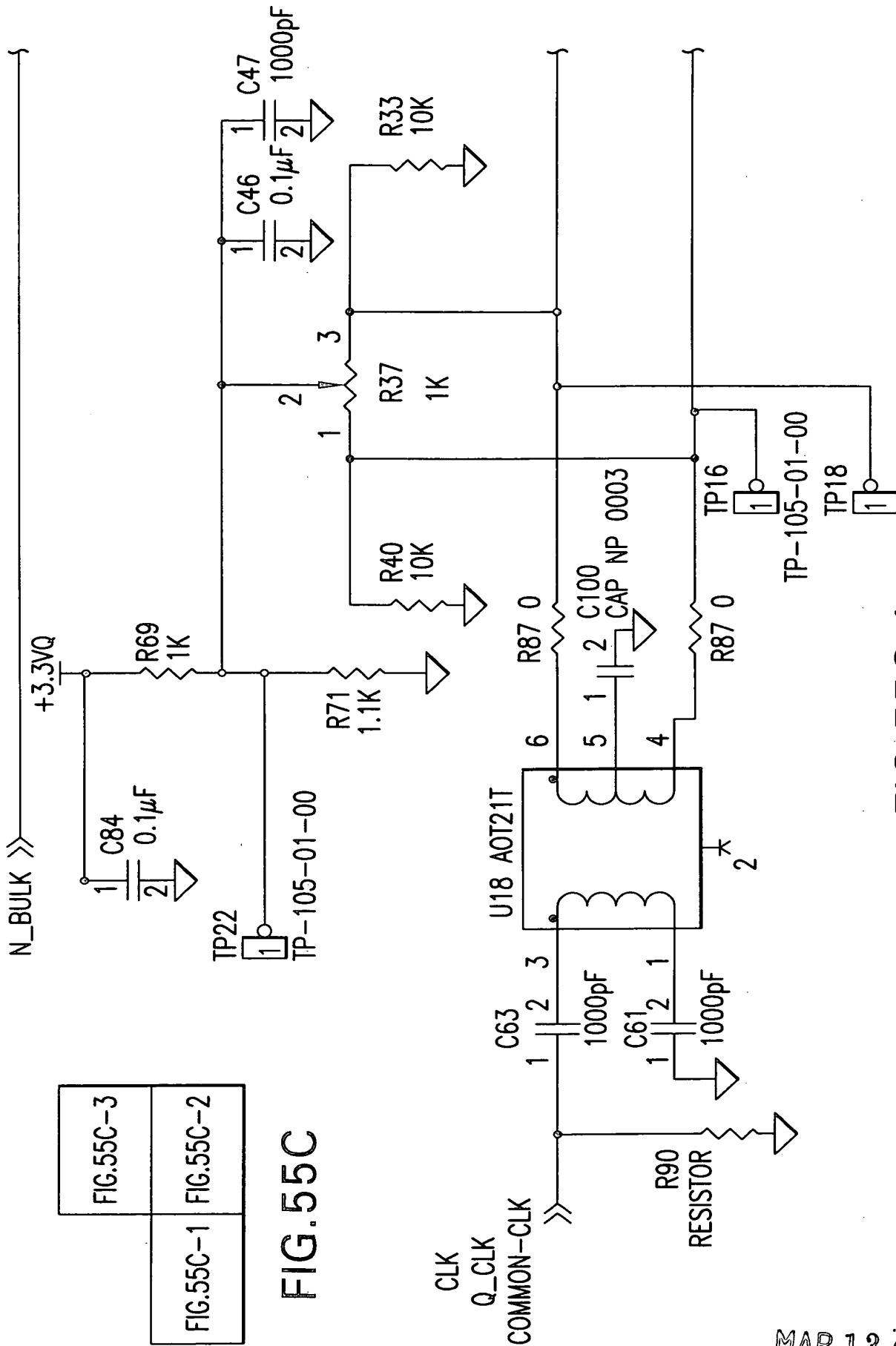
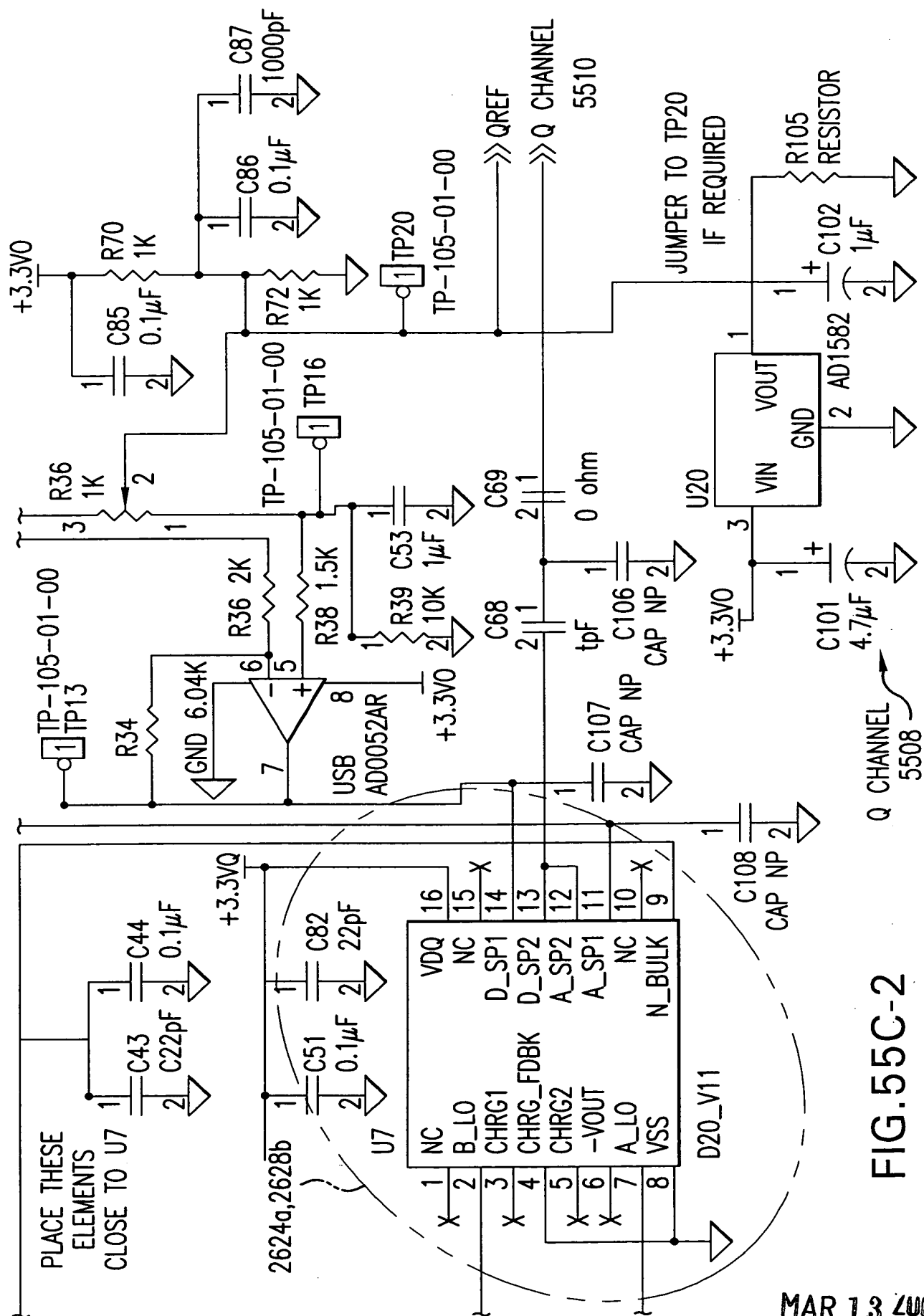


FIG.55C-1 TP-105-01-00



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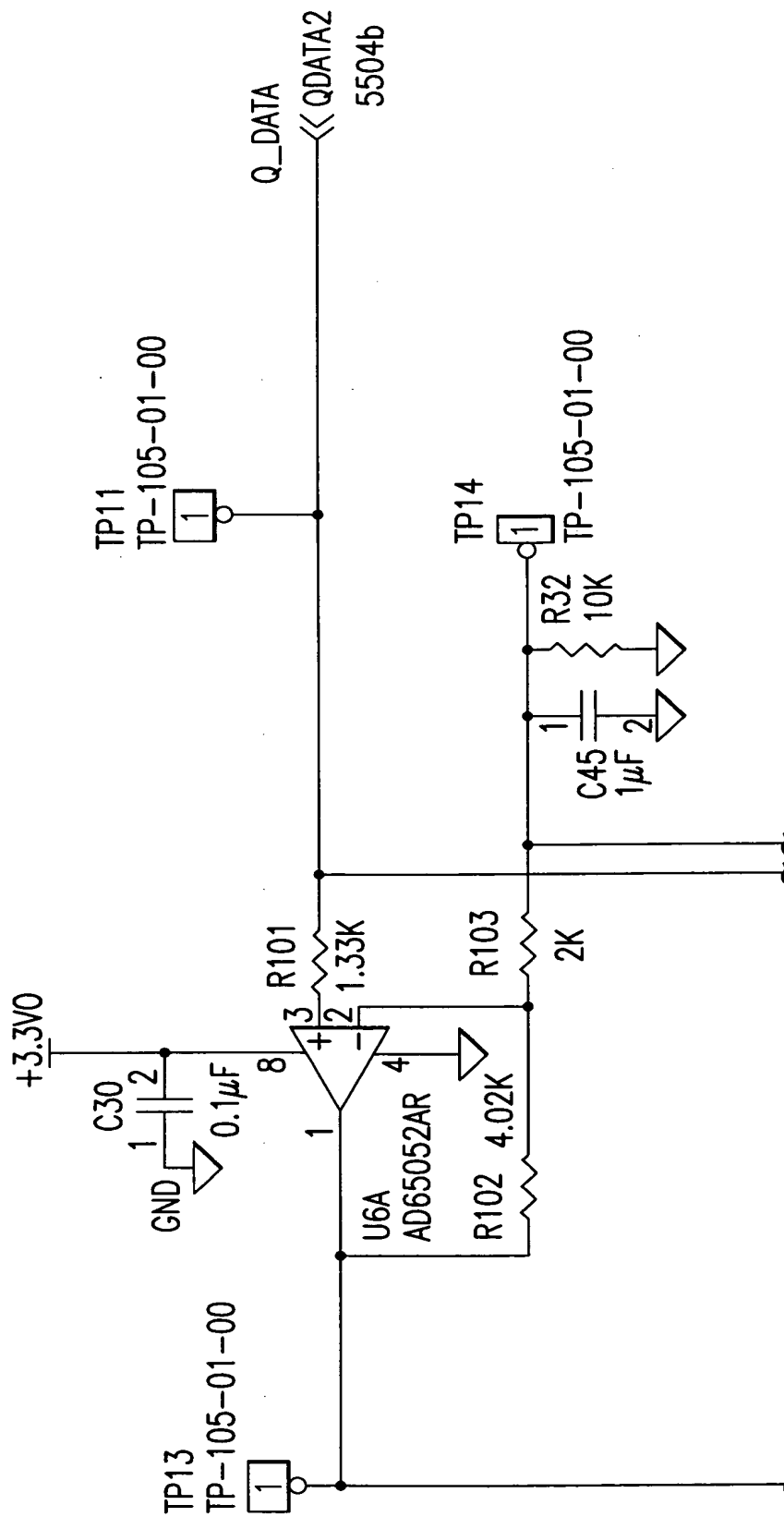
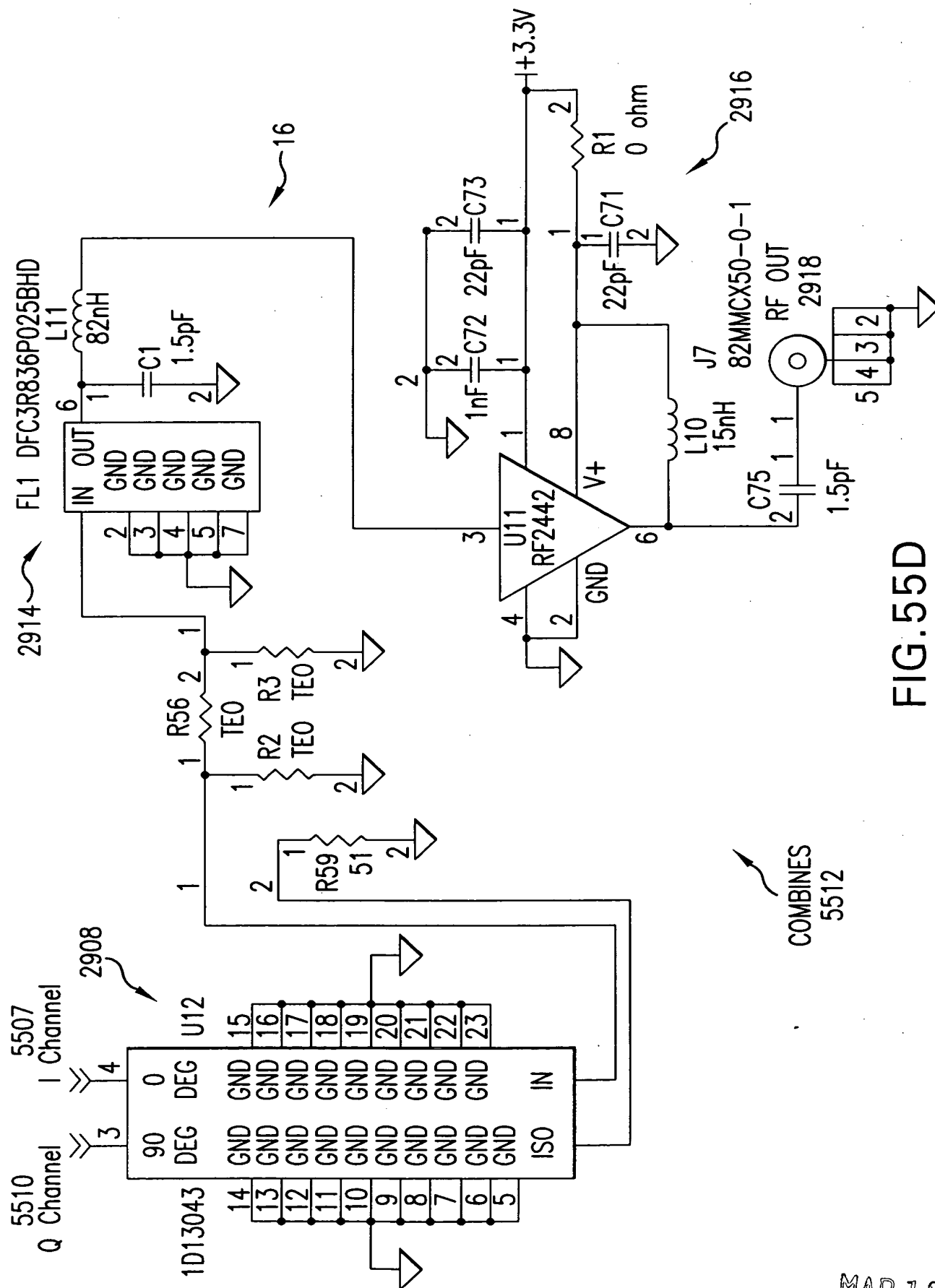
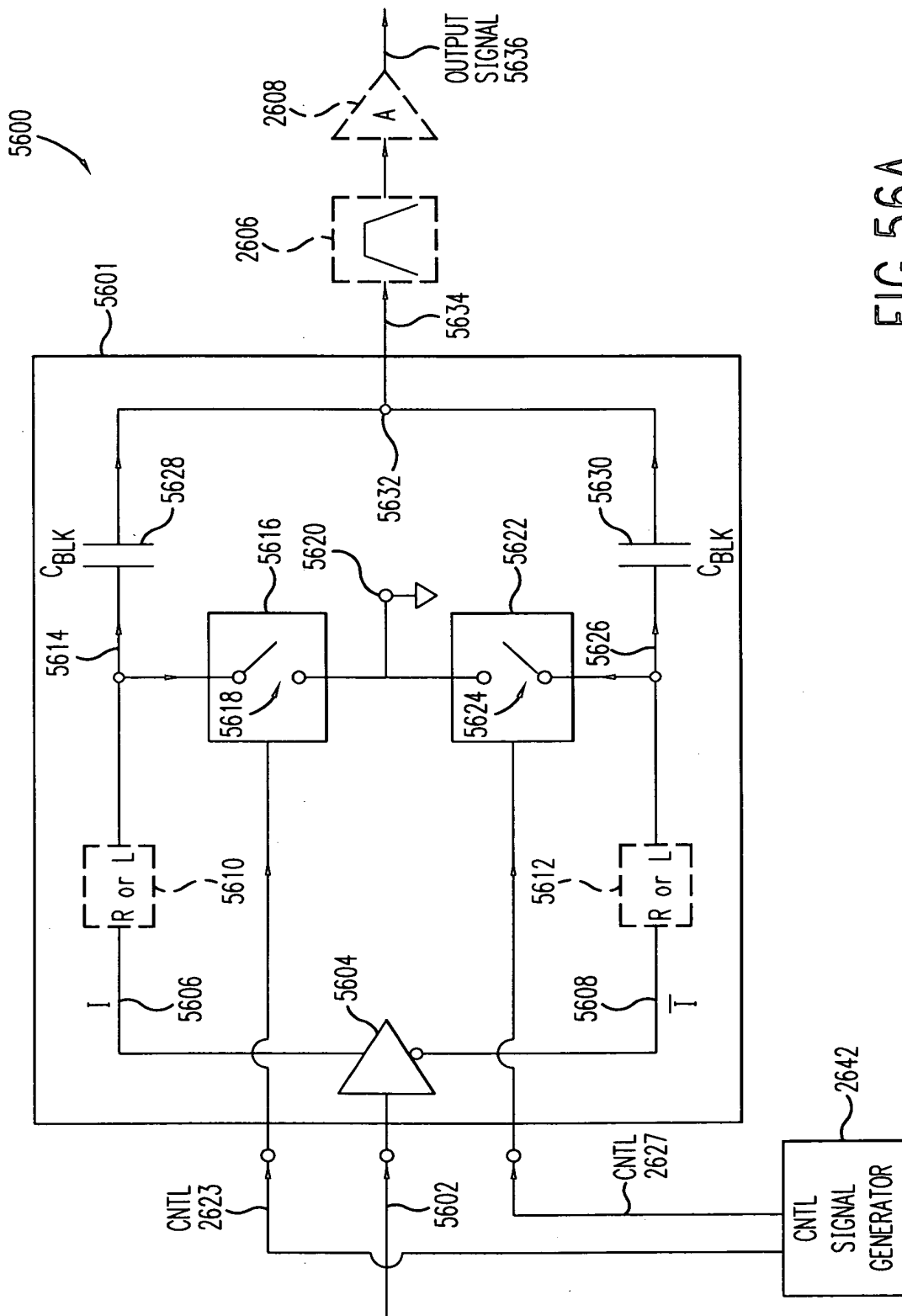


FIG.55C-3





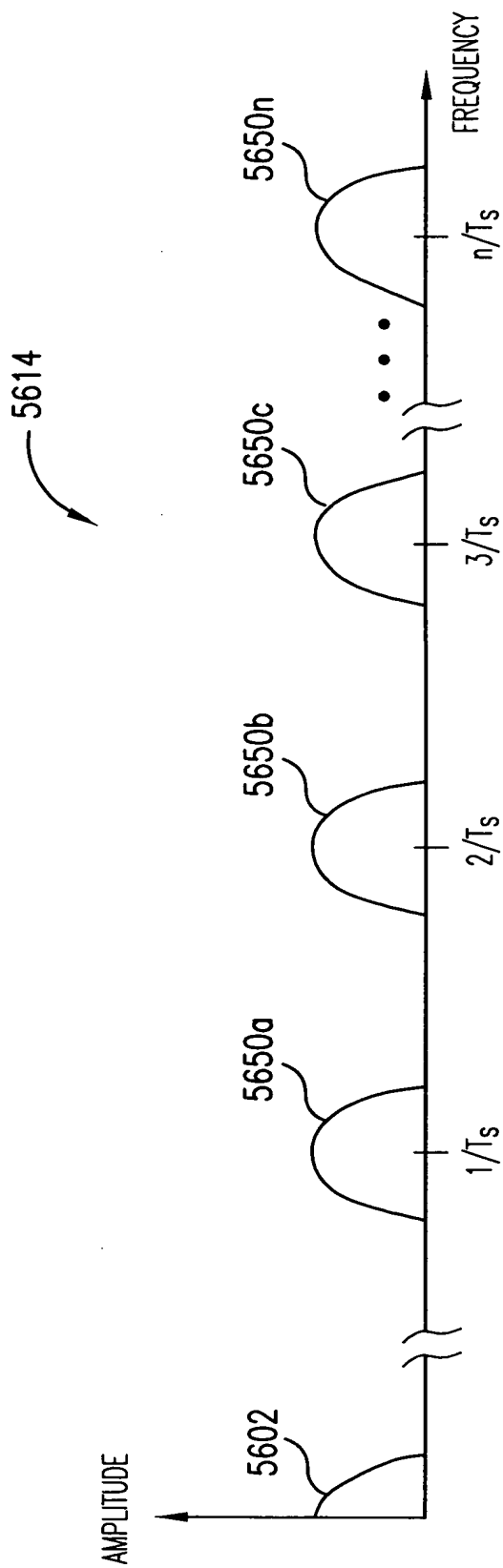


FIG. 56B

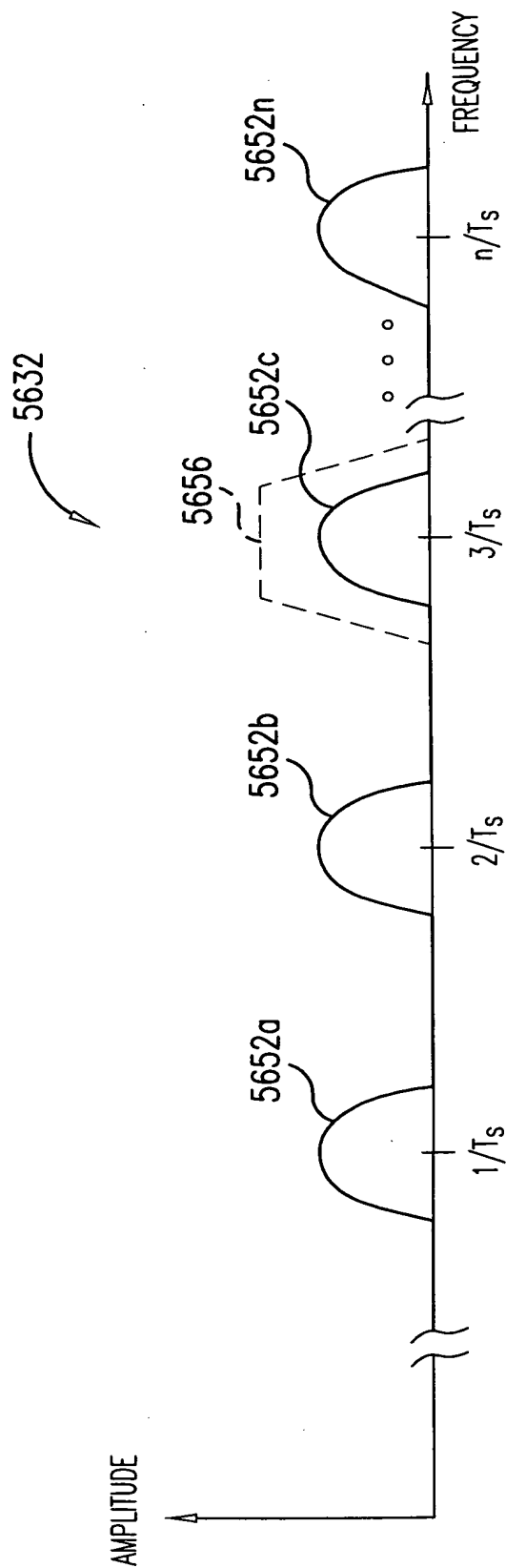
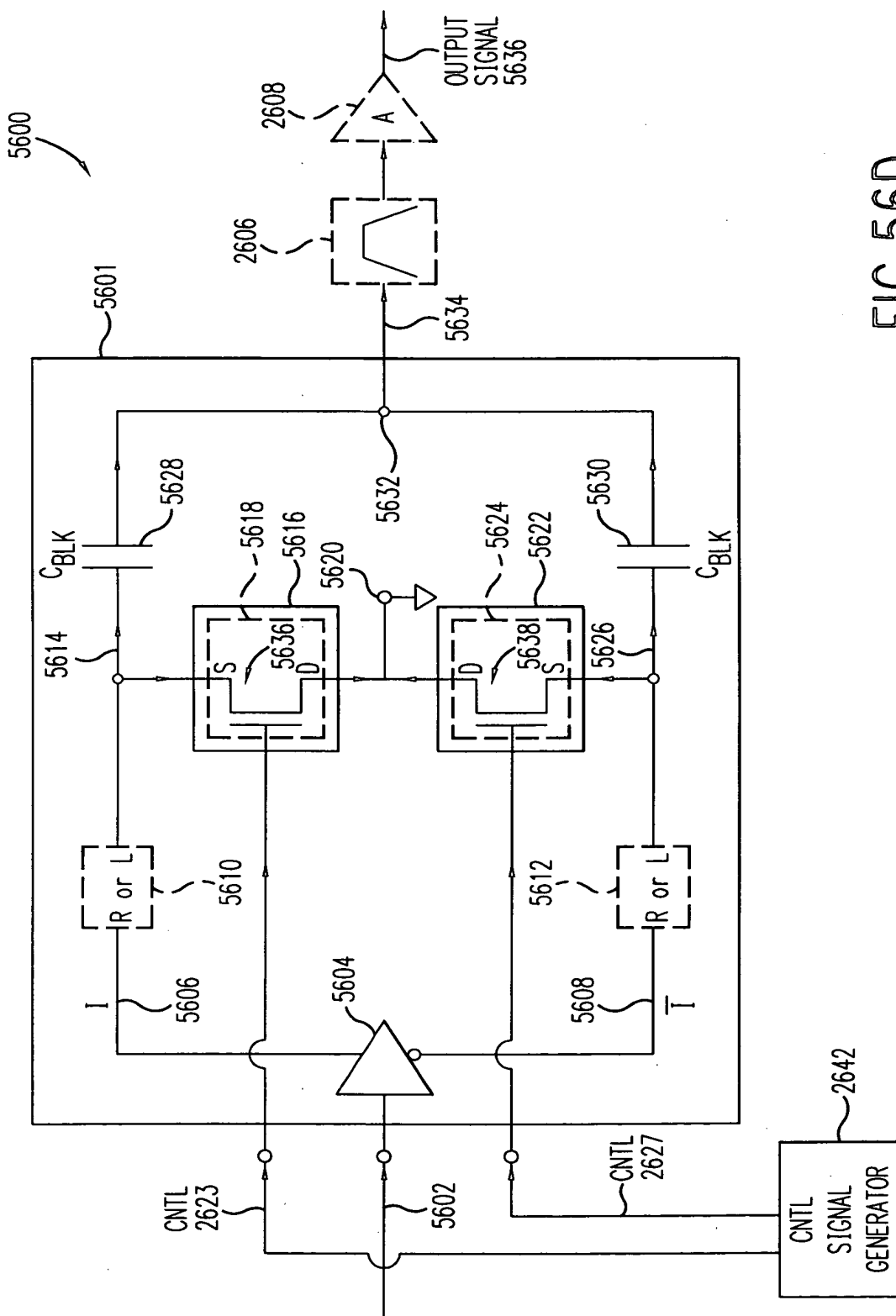


FIG. 56C

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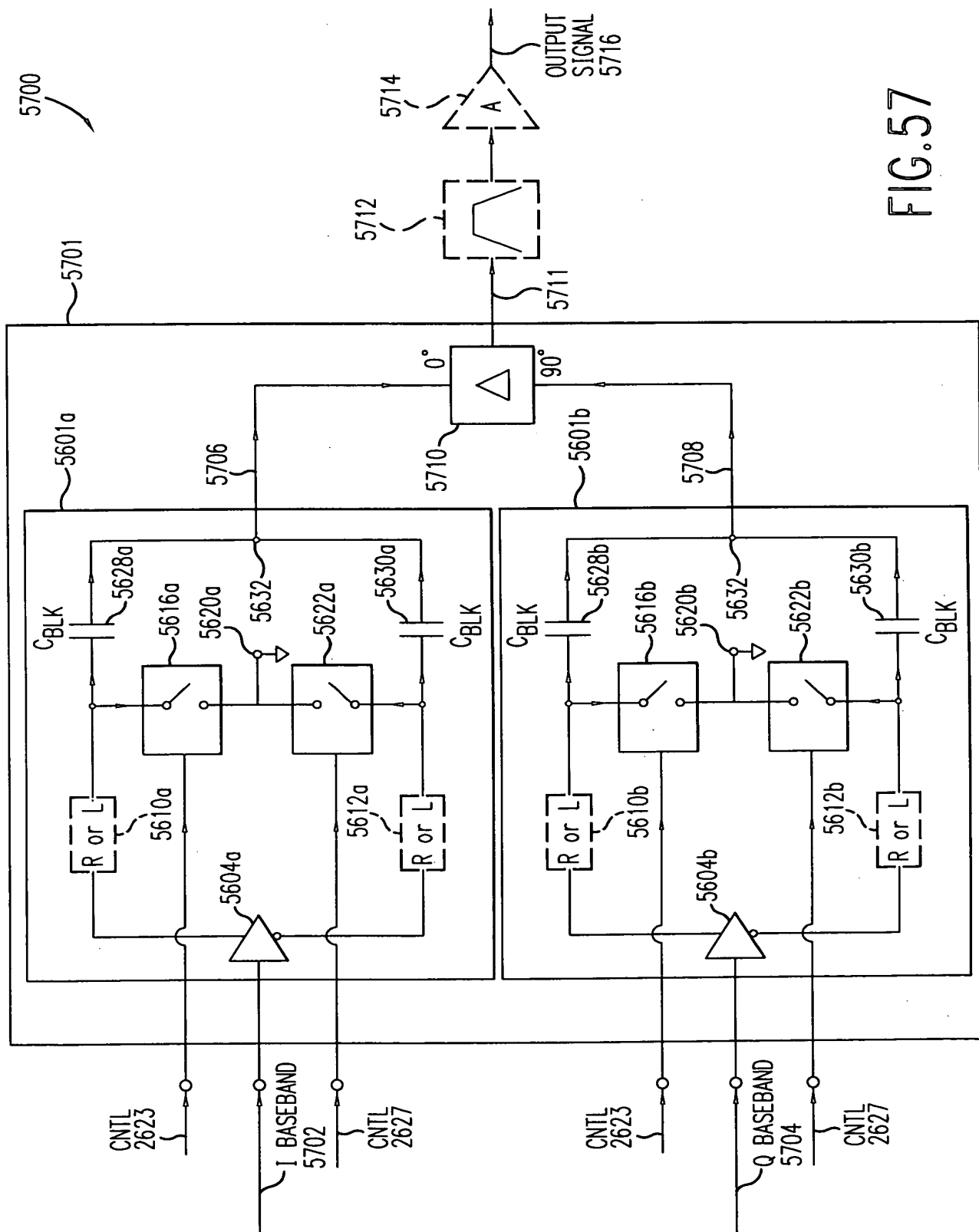


FIG. 57

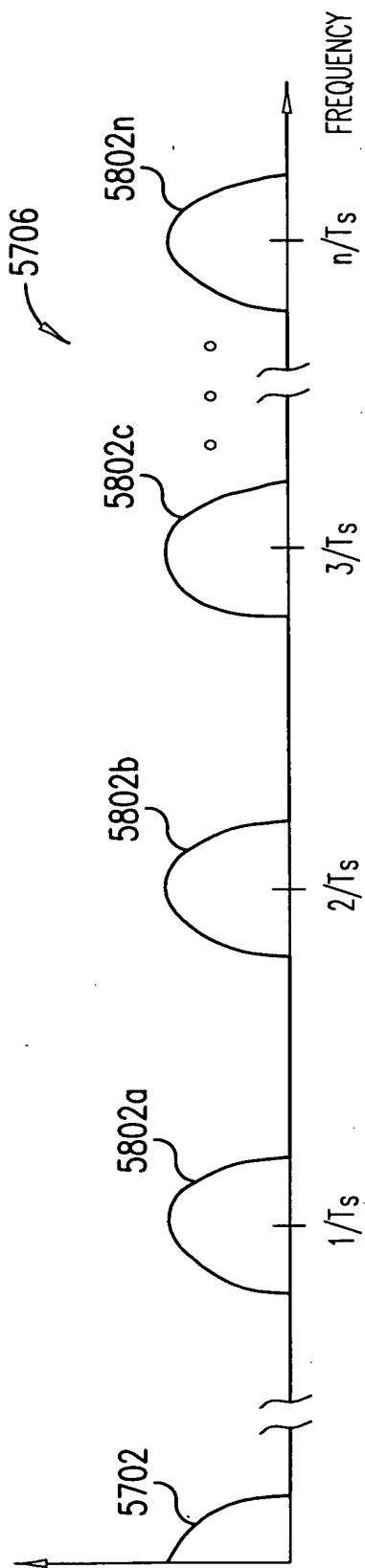


FIG. 58A

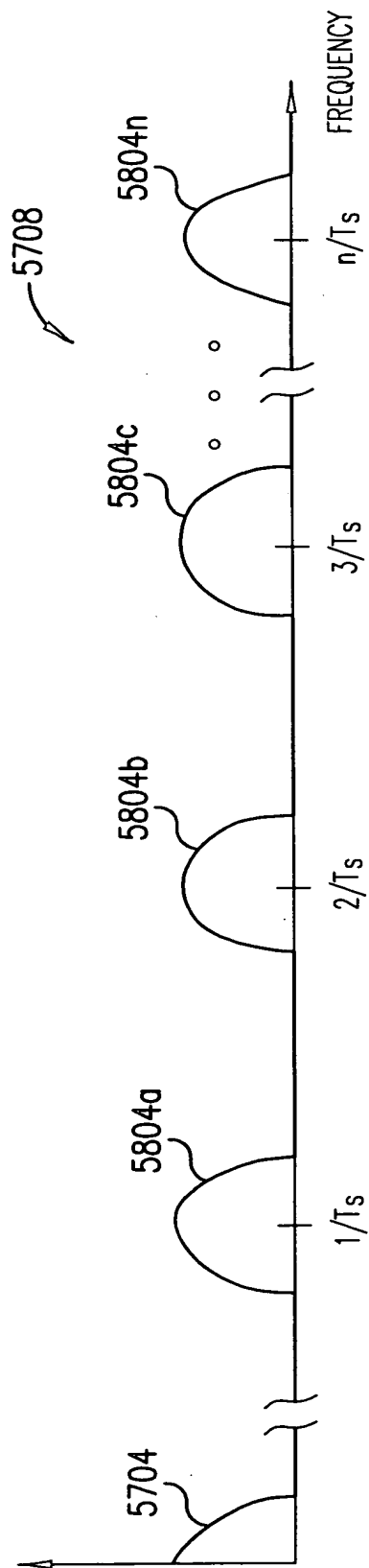


FIG. 58B

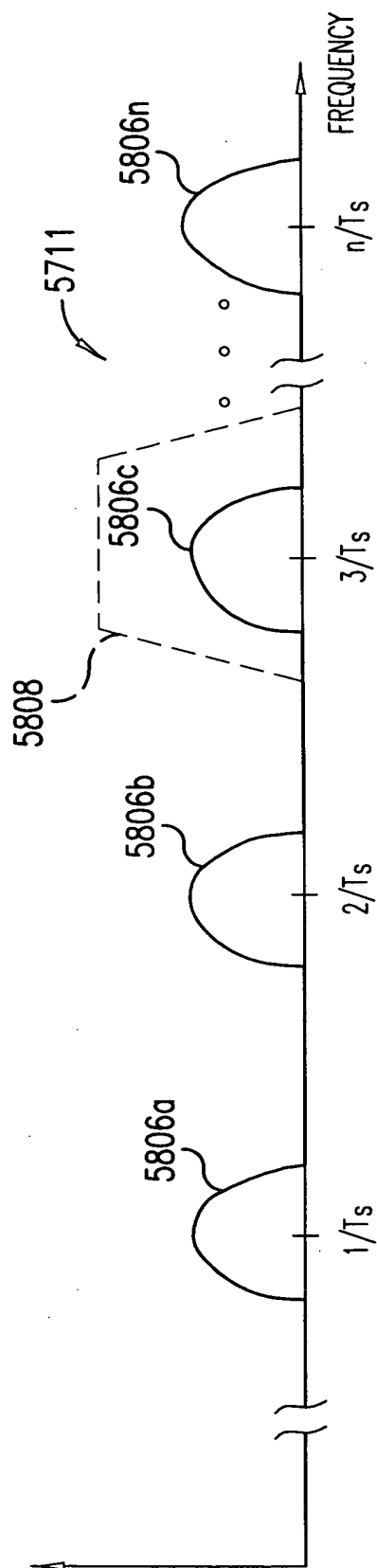


FIG. 58C

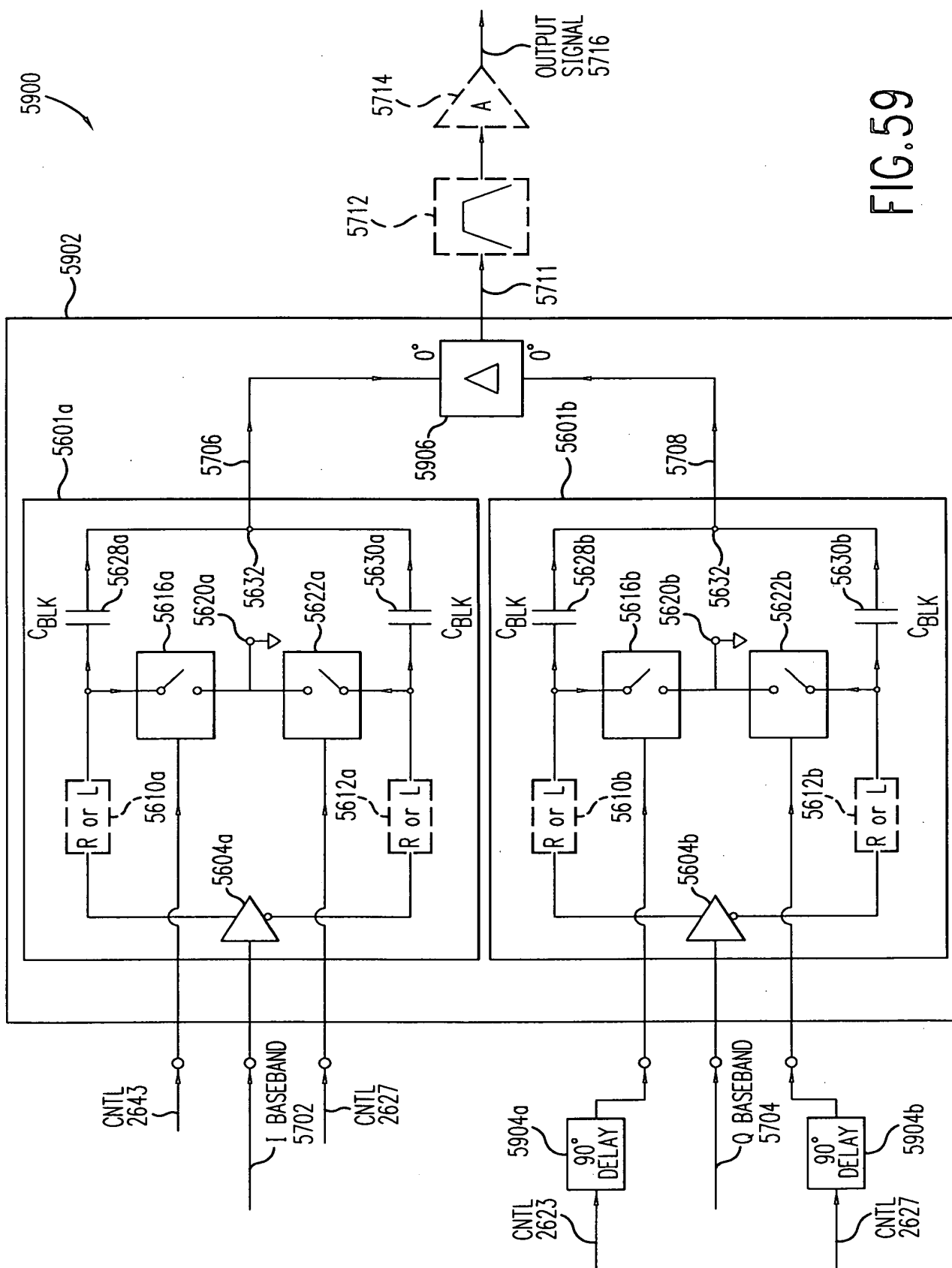


FIG. 59

MAR 13 1966

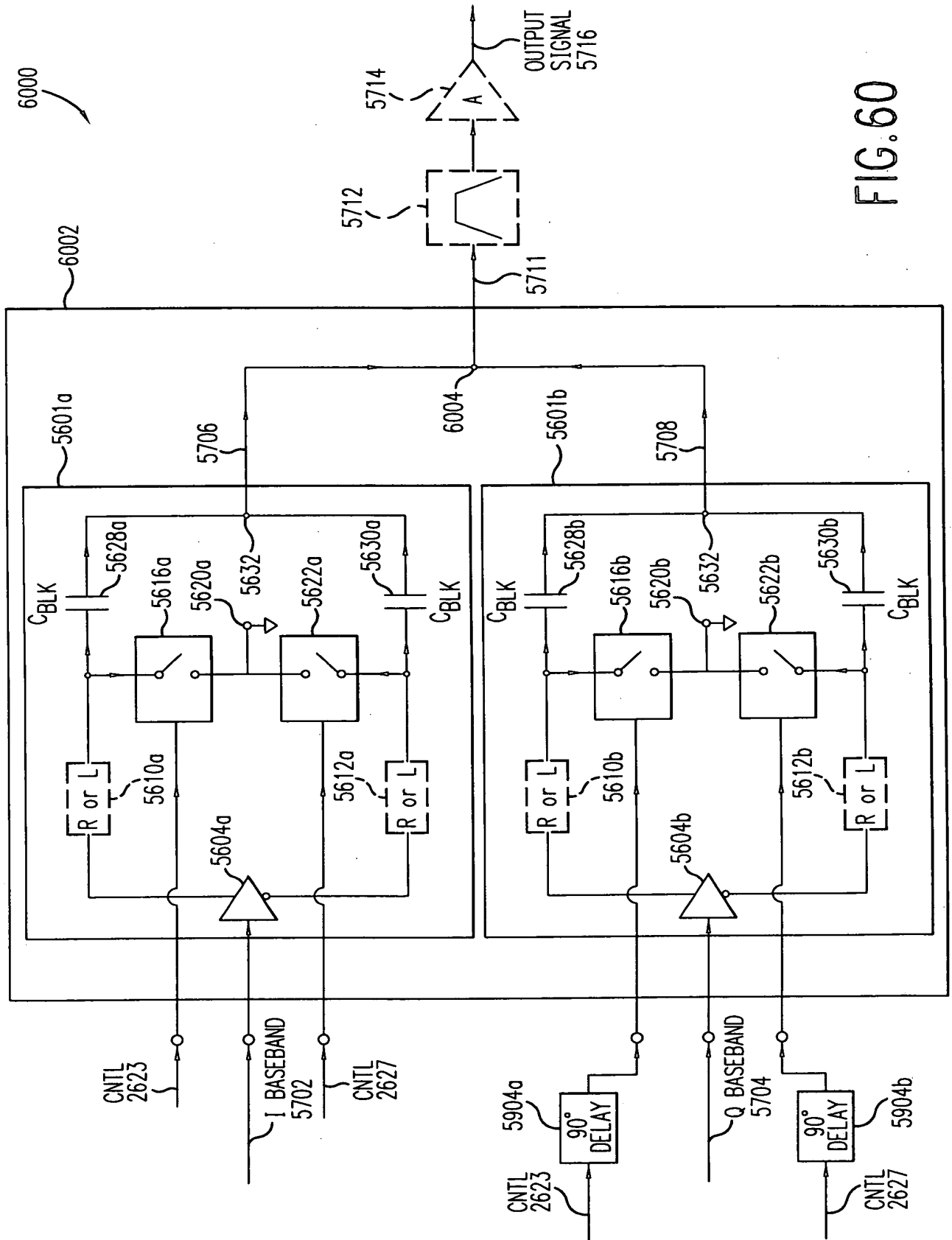


FIG. 60

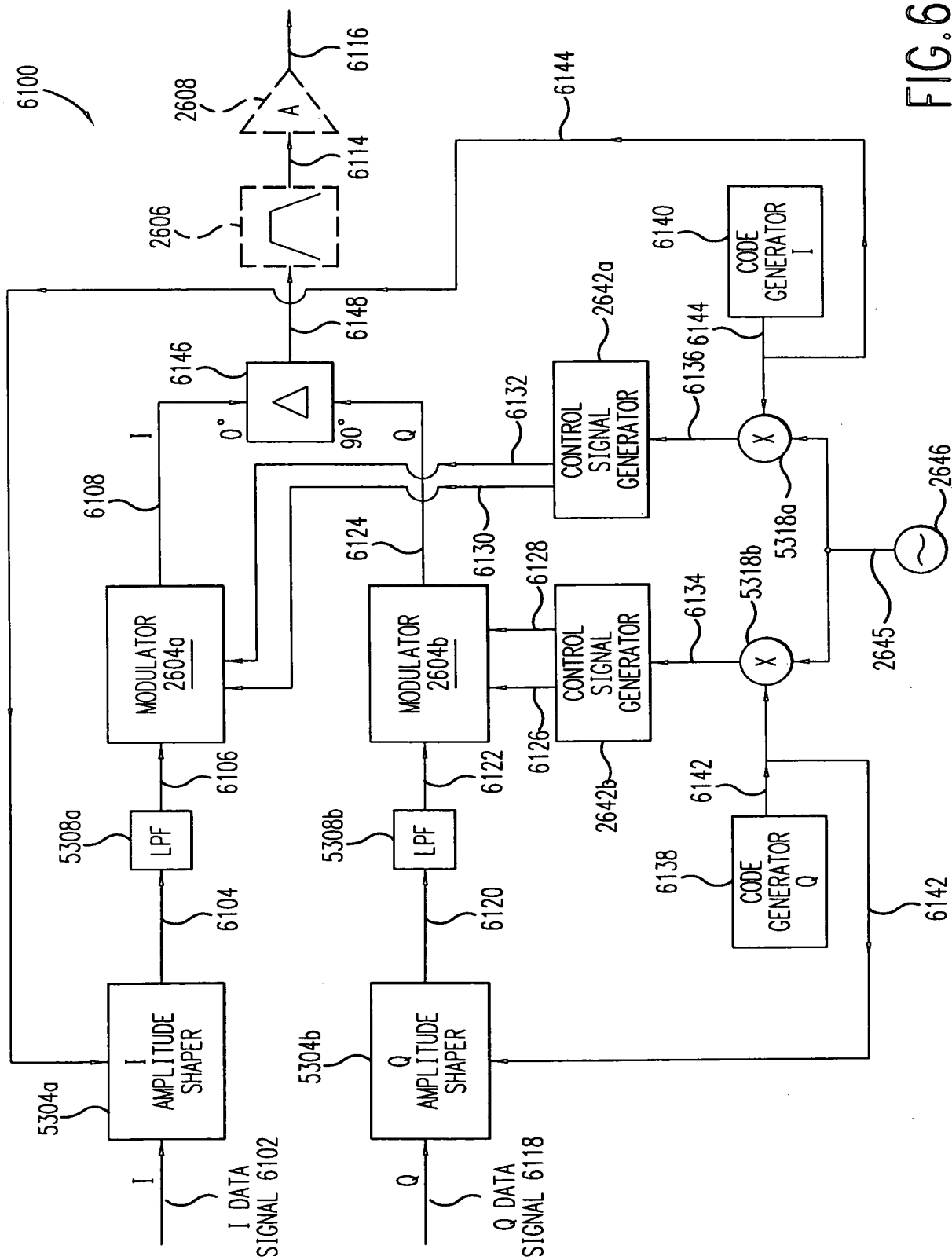


FIG. 61

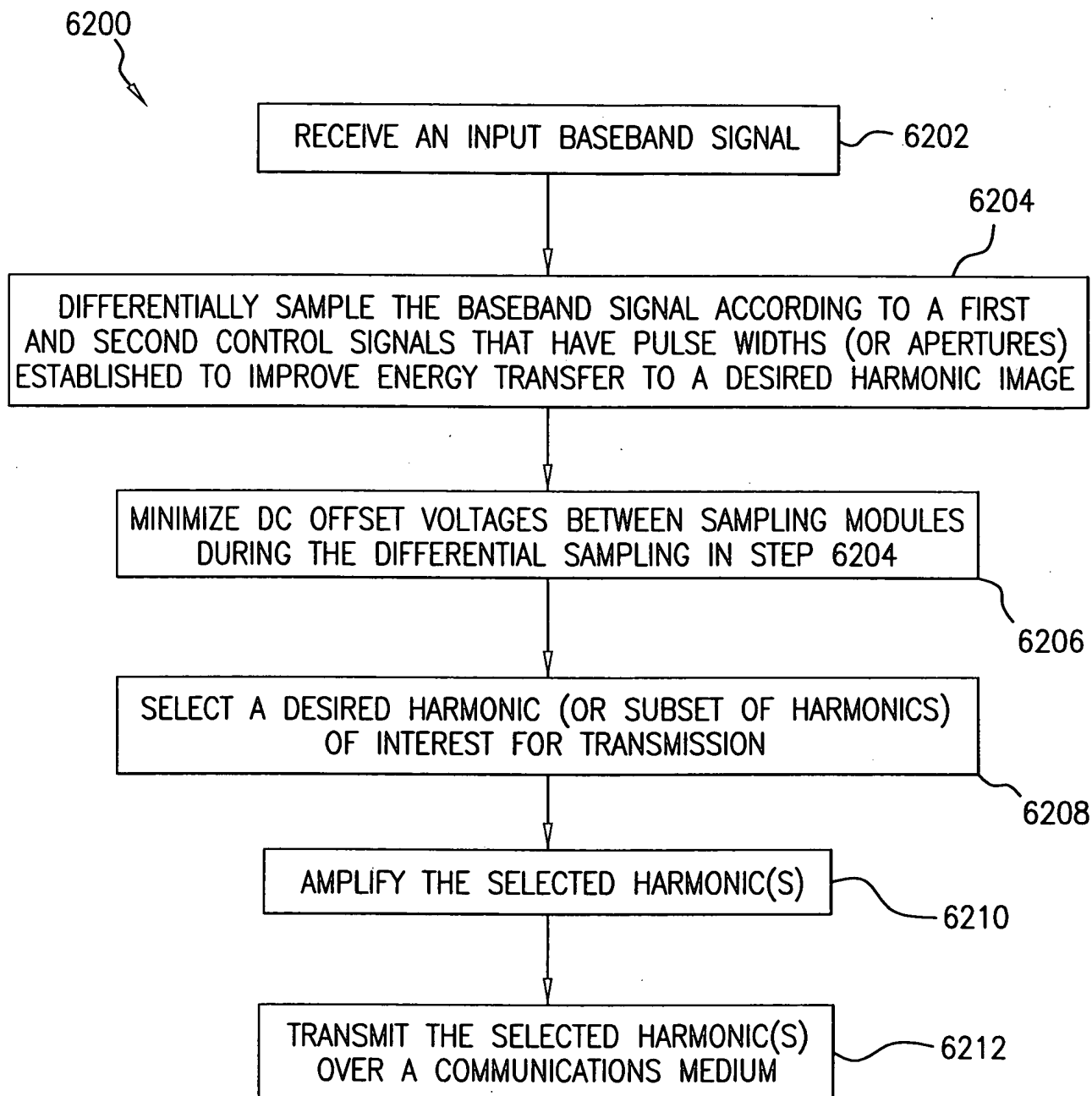


FIG. 62

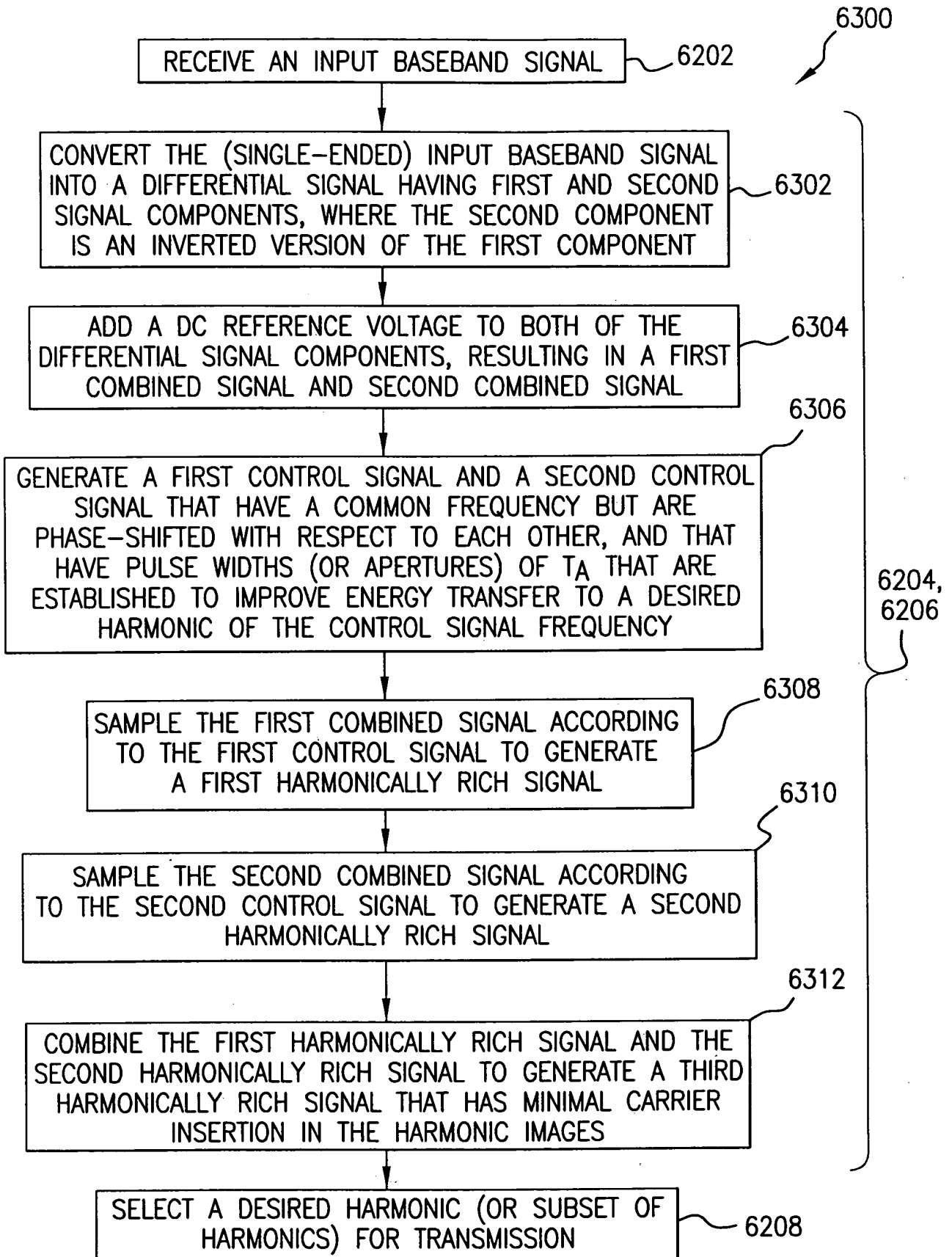


FIG.63

MAR 13 2006

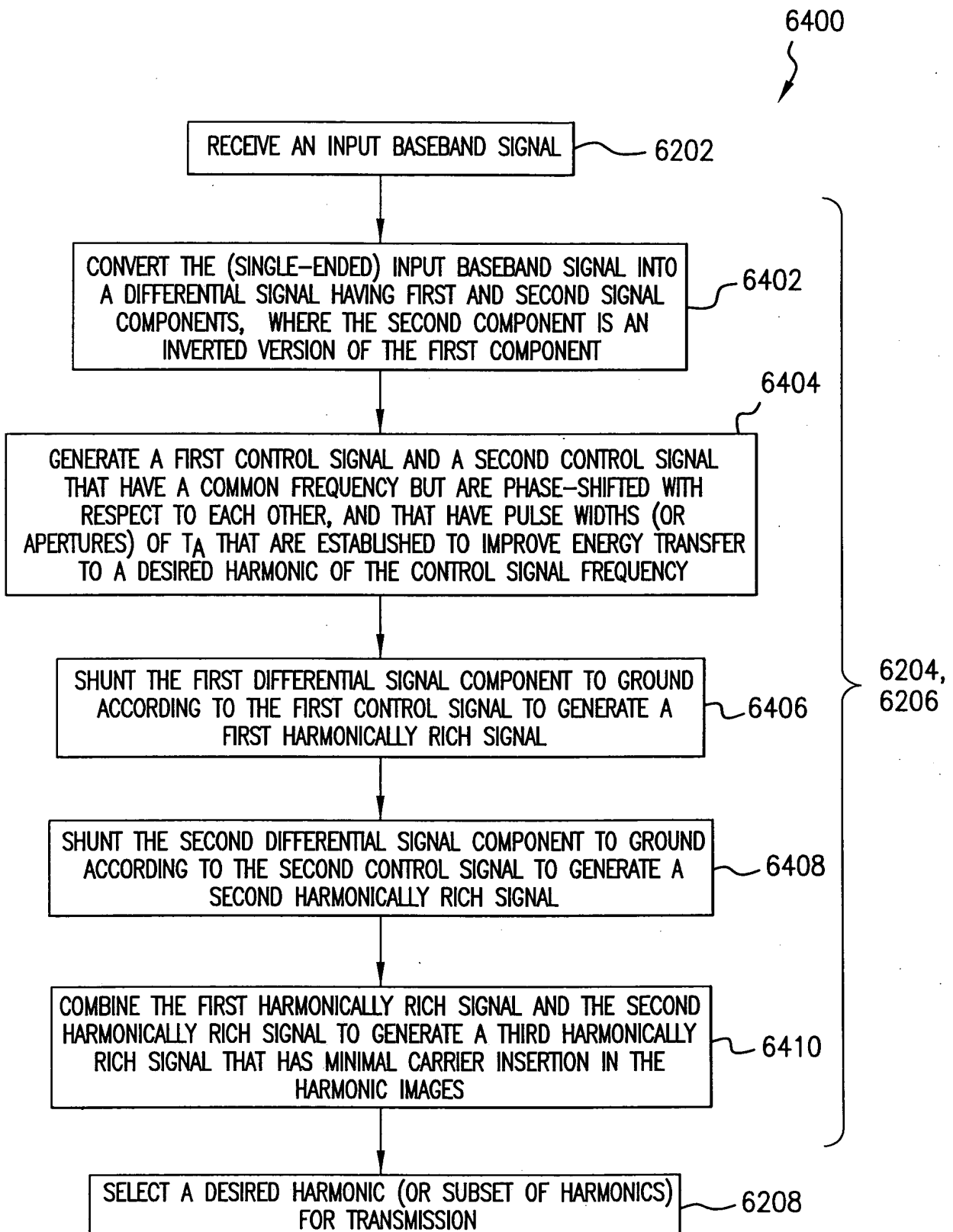


FIG.64

MAR 13 2006

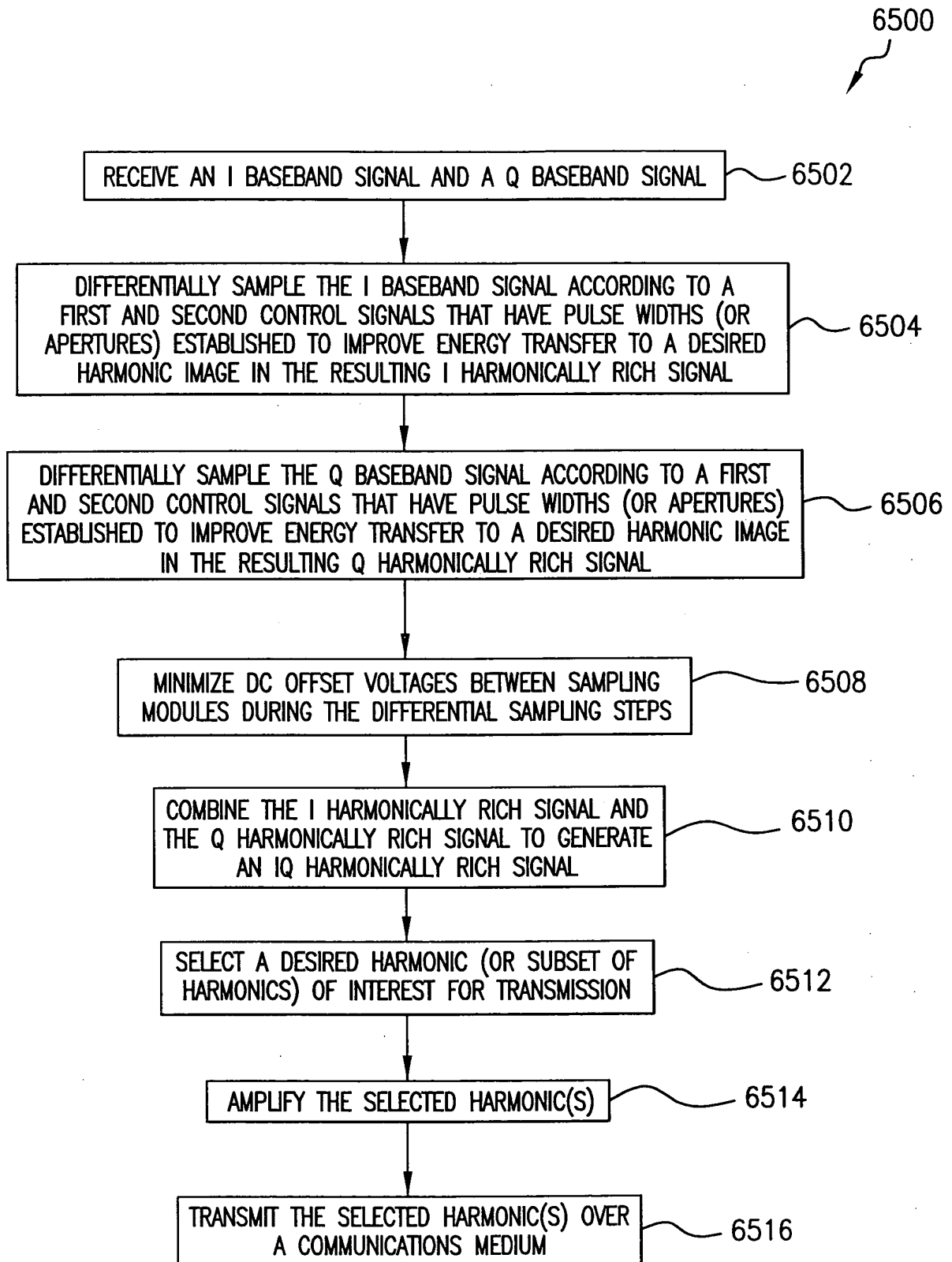


FIG.65

MAR 13 2006

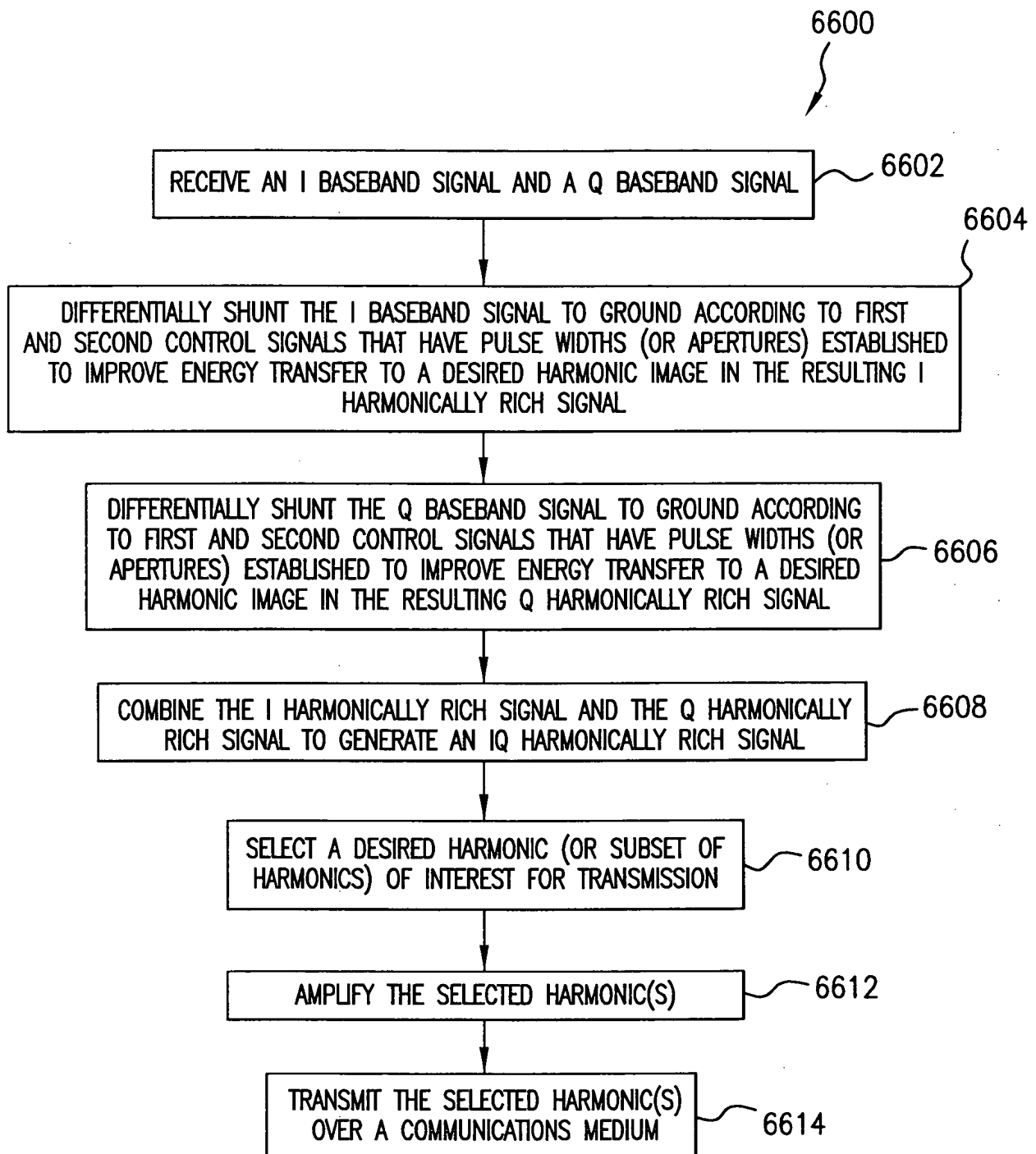


FIG.66

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6700

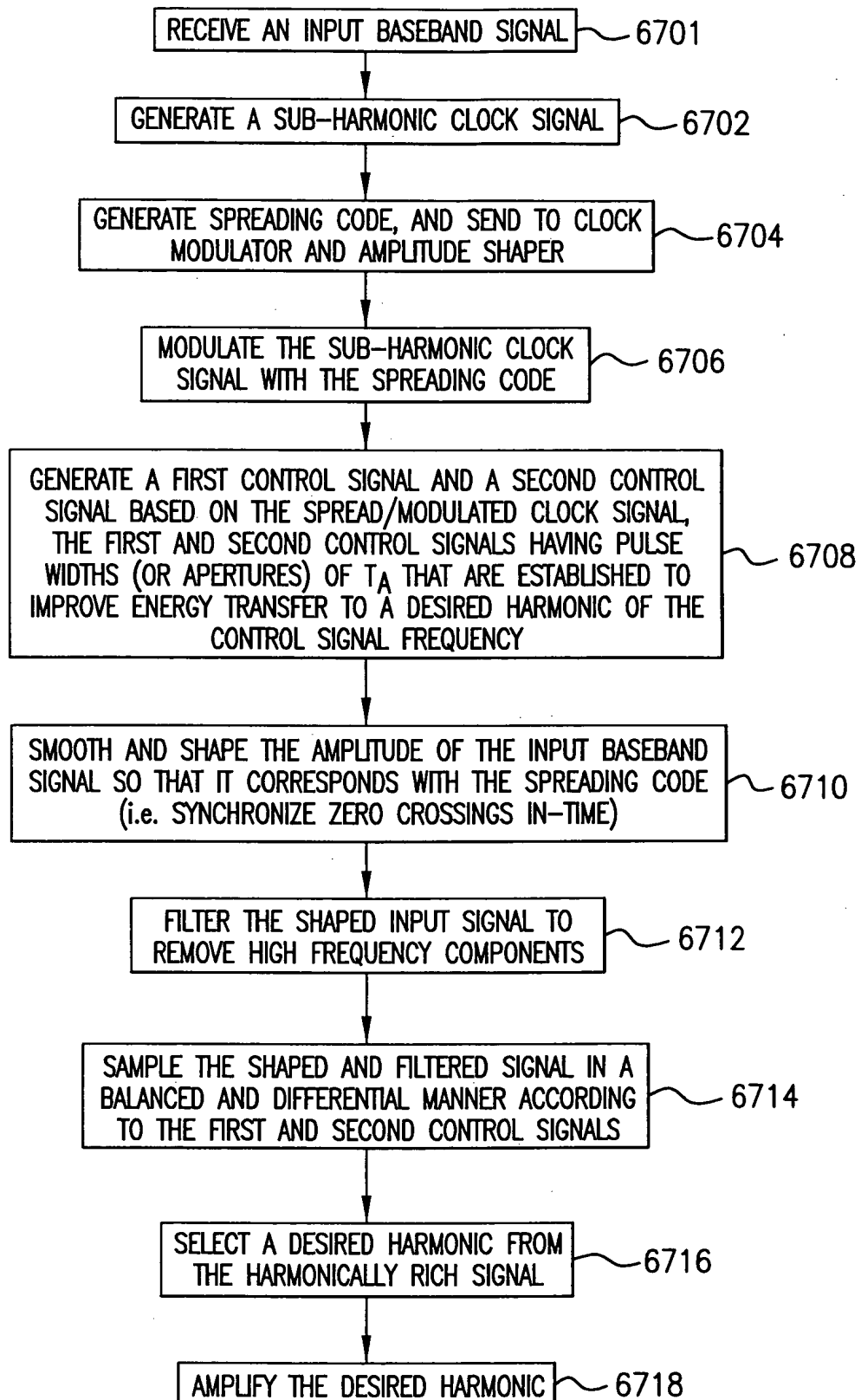


FIG.67

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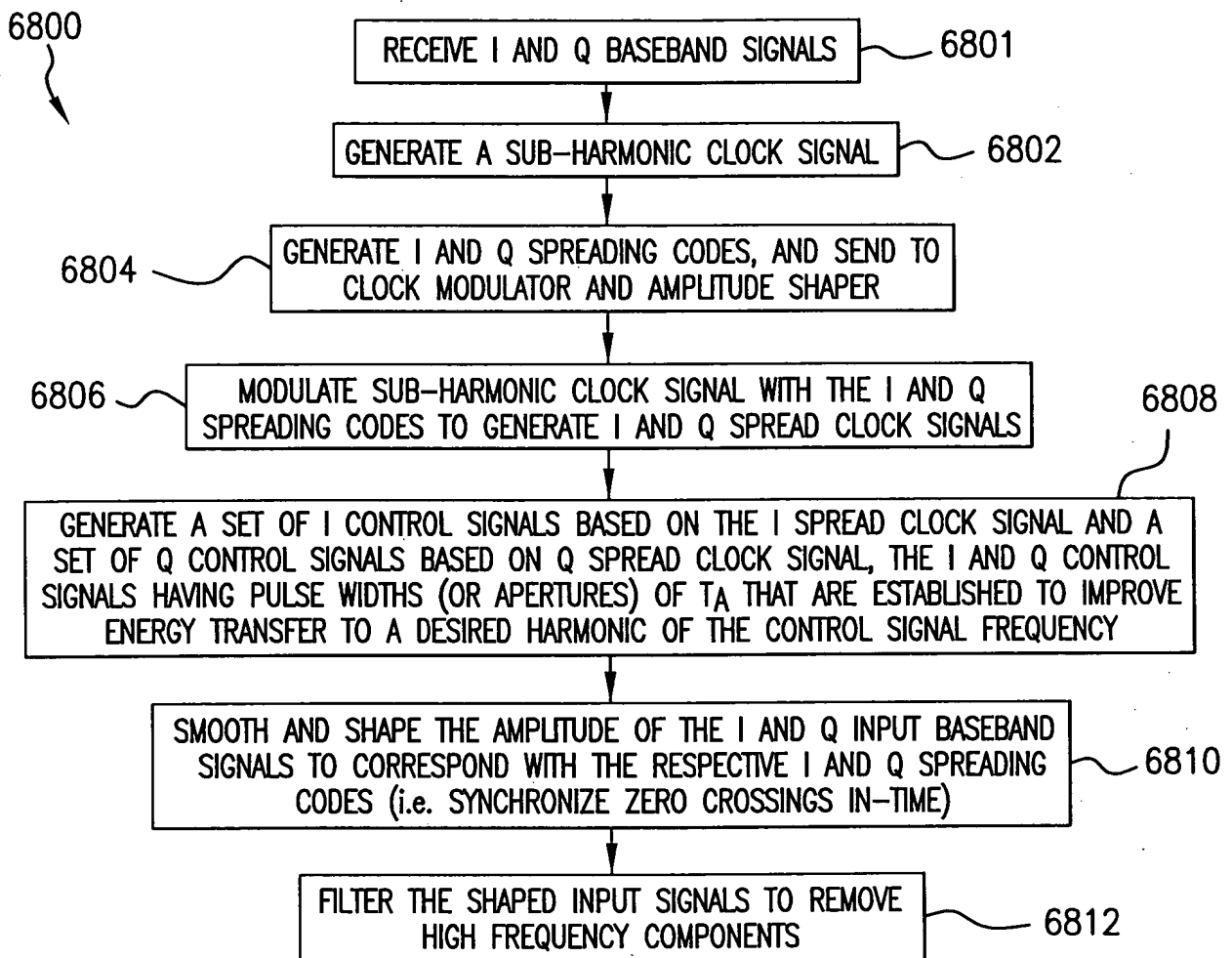


FIG. 68A

6800
(CONTINUED)

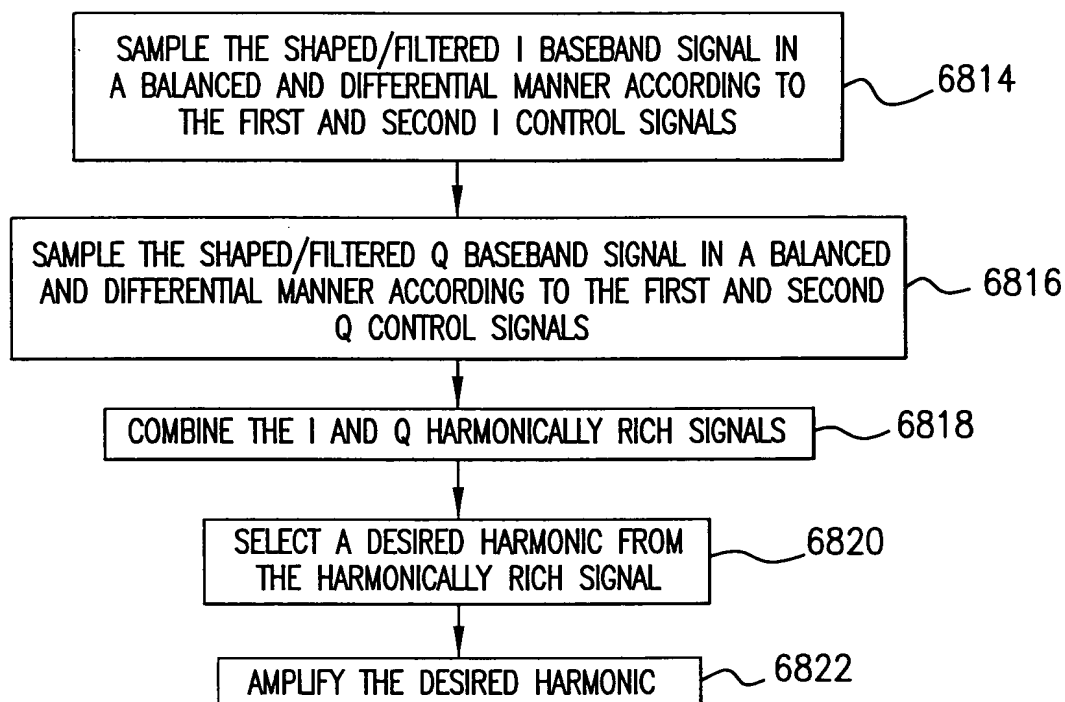


FIG.68B

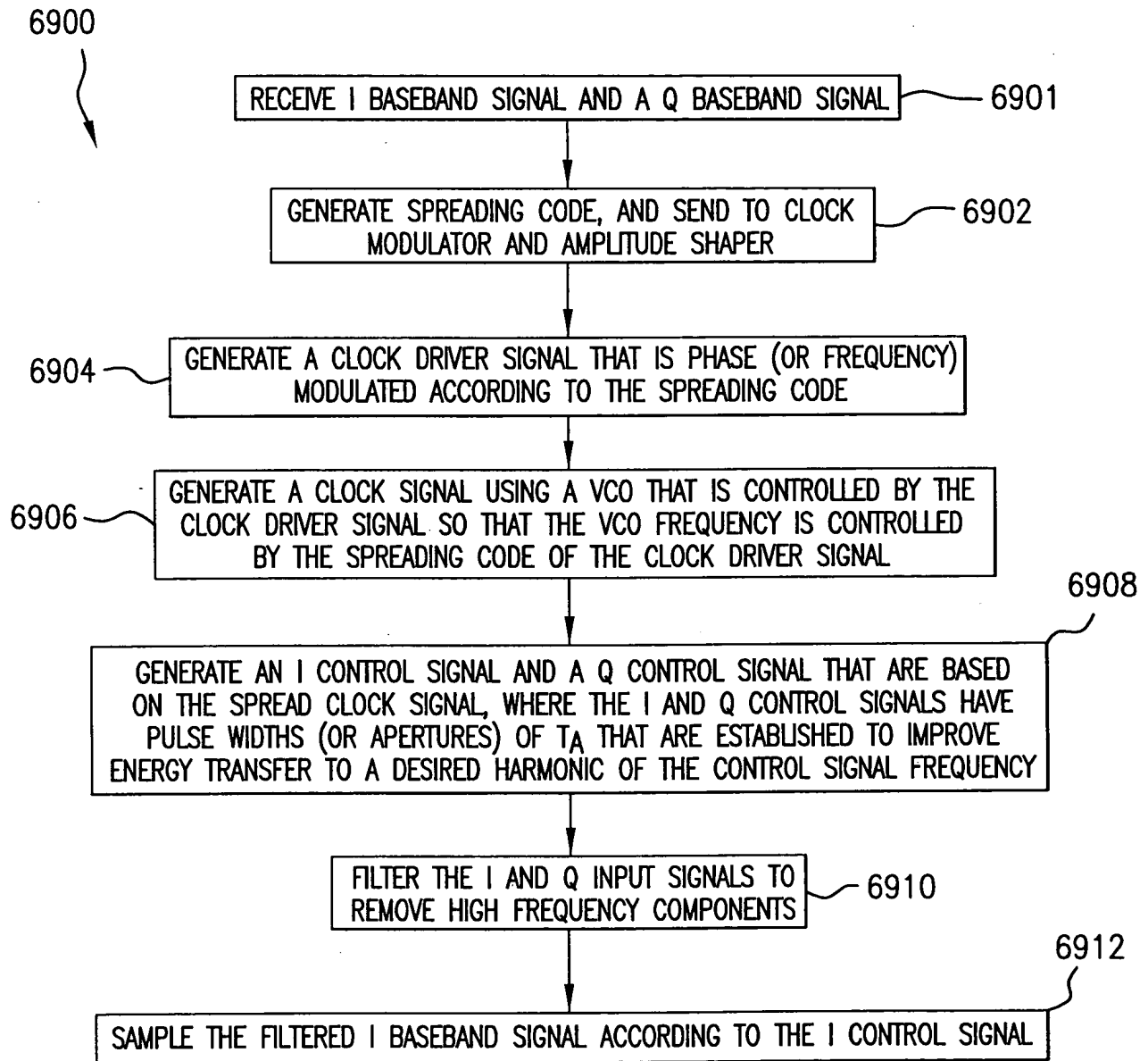


FIG. 69A

6900
(CONTINUED)

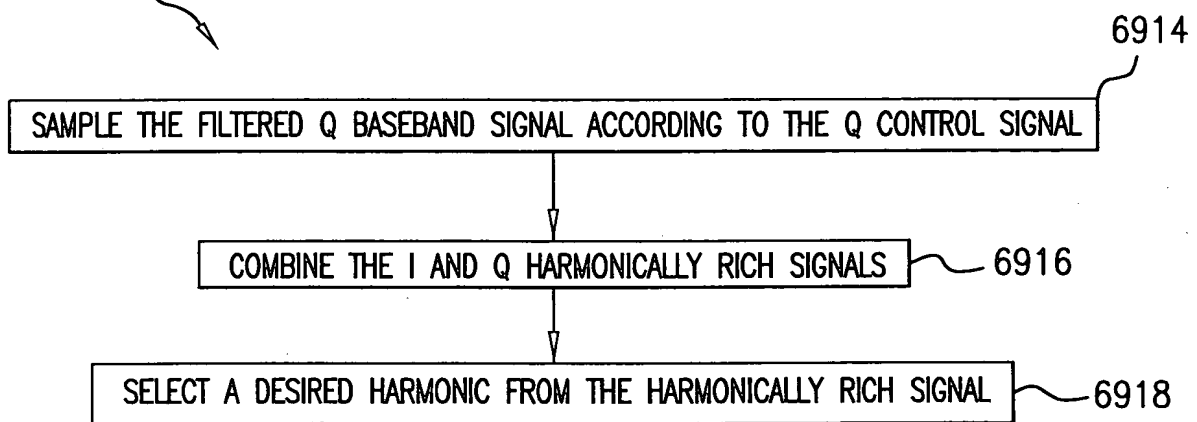
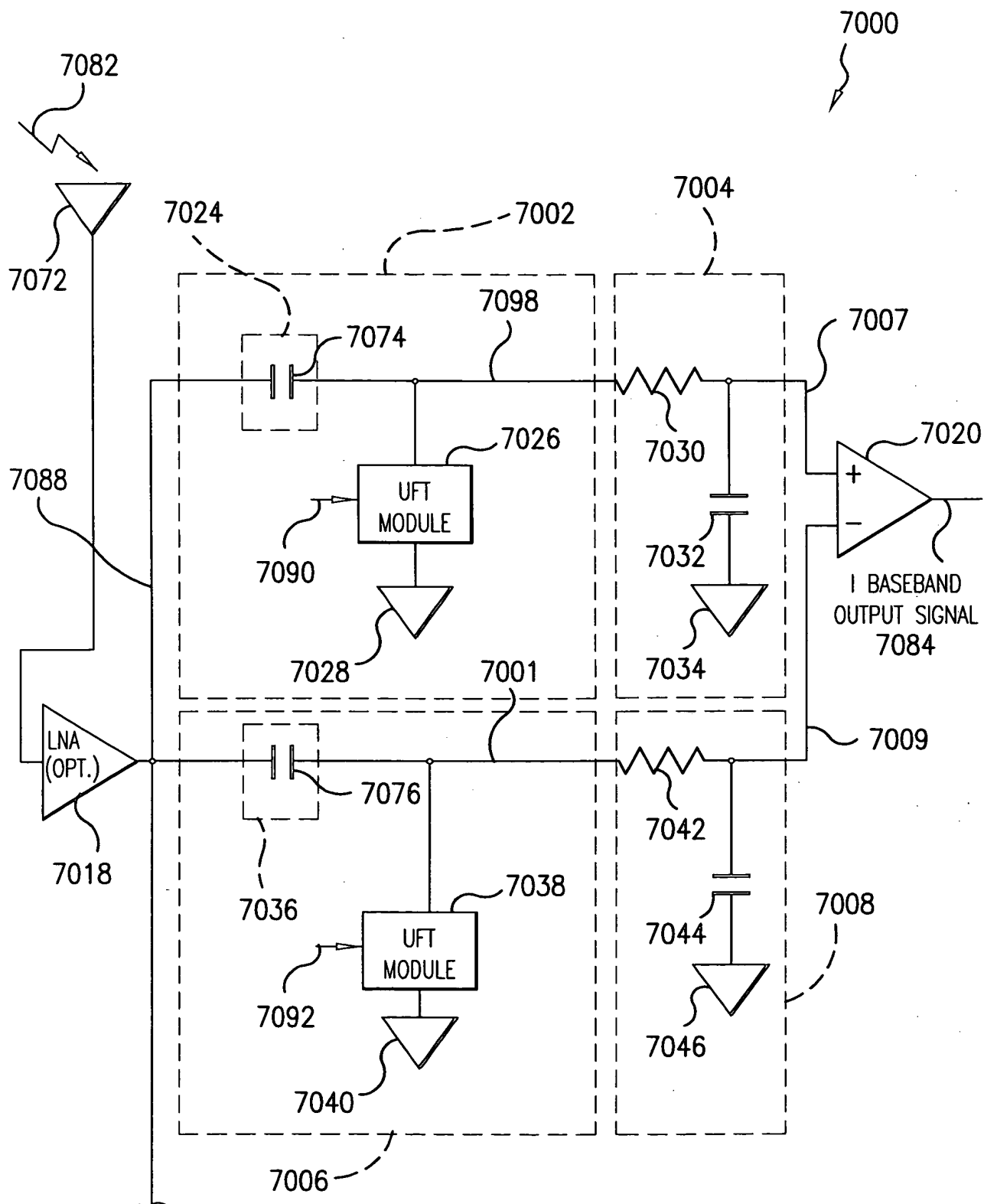


FIG. 69B



CONTINUE
FIG. 70A2

FIG. 70A1

MAR 13 2006

FROM
FIG. 70A1

7000

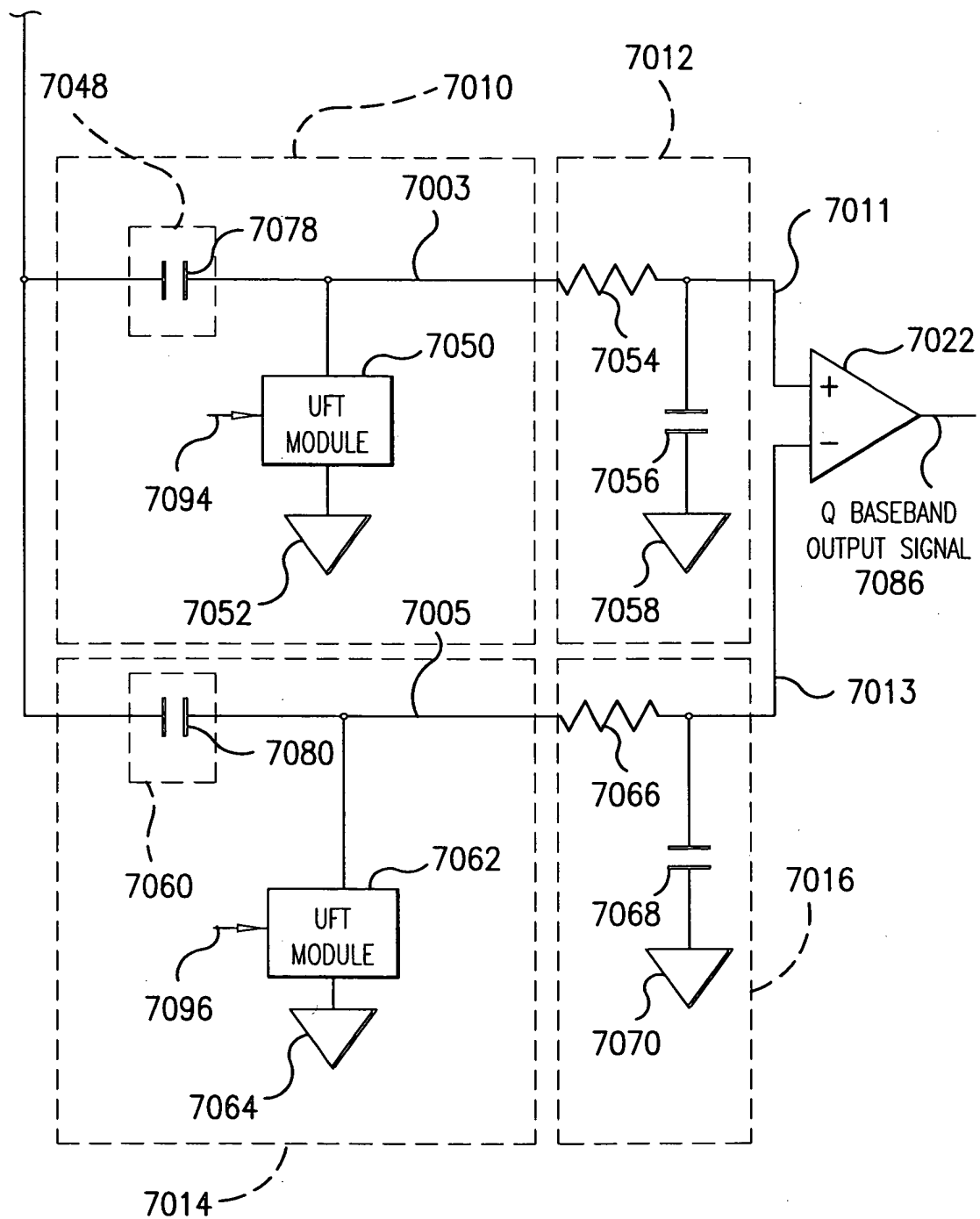
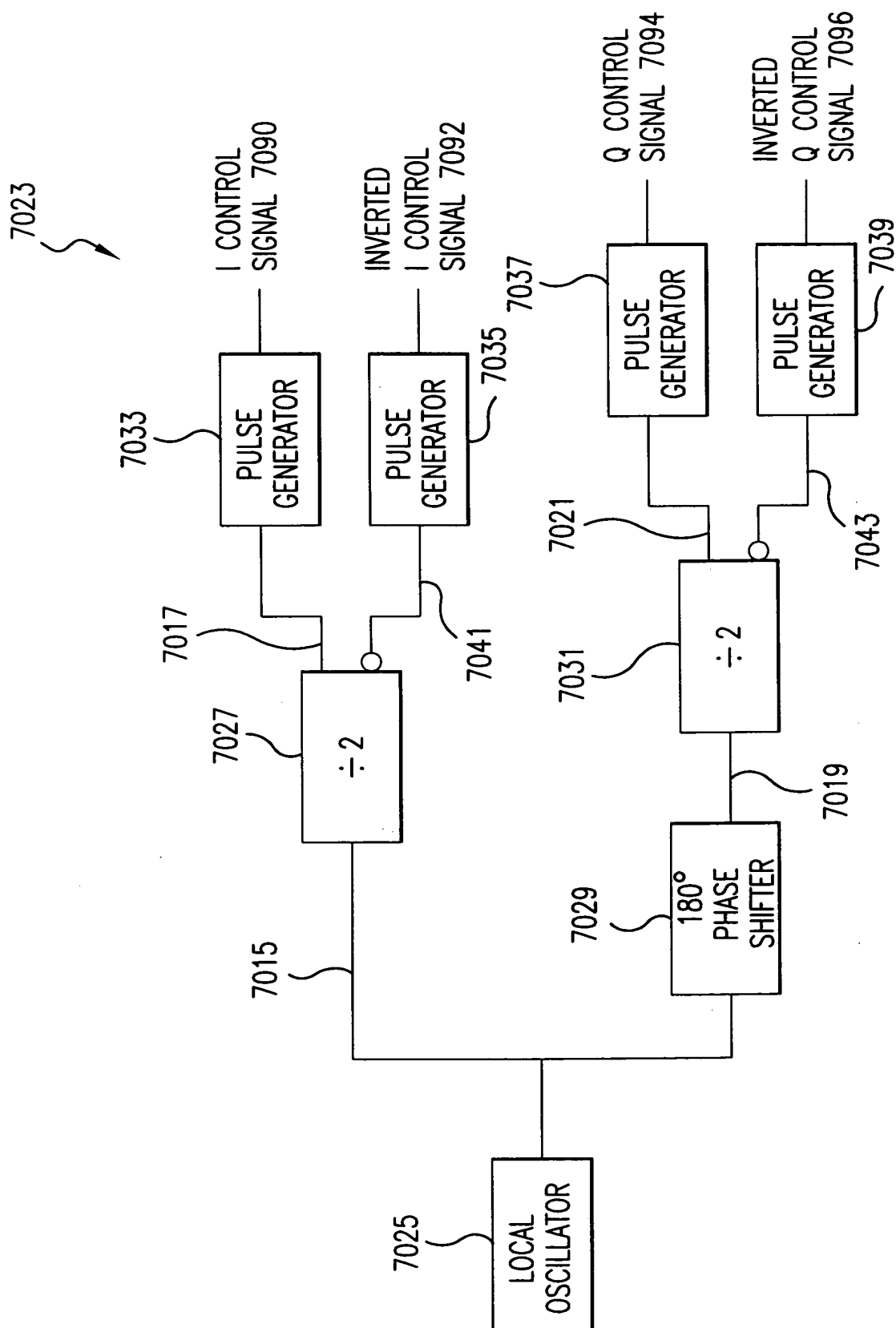


FIG. 70A2



LOCAL OSCILLATOR
SIGNAL 7015

HALF FREQUENCY LO
SIGNAL 7017

PHASE SHIFTED LO
SIGNAL 7019

HALF FREQUENCY
PHASE SHIFTED LO
SIGNAL 7021

I CONTROL SIGNAL
7090

INVERTED I CONTROL
SIGNAL 7092

Q CONTROL SIGNAL
7094

INVERTED Q CONTROL
SIGNAL 7096

COMBINED CONTROL
SIGNAL 7045

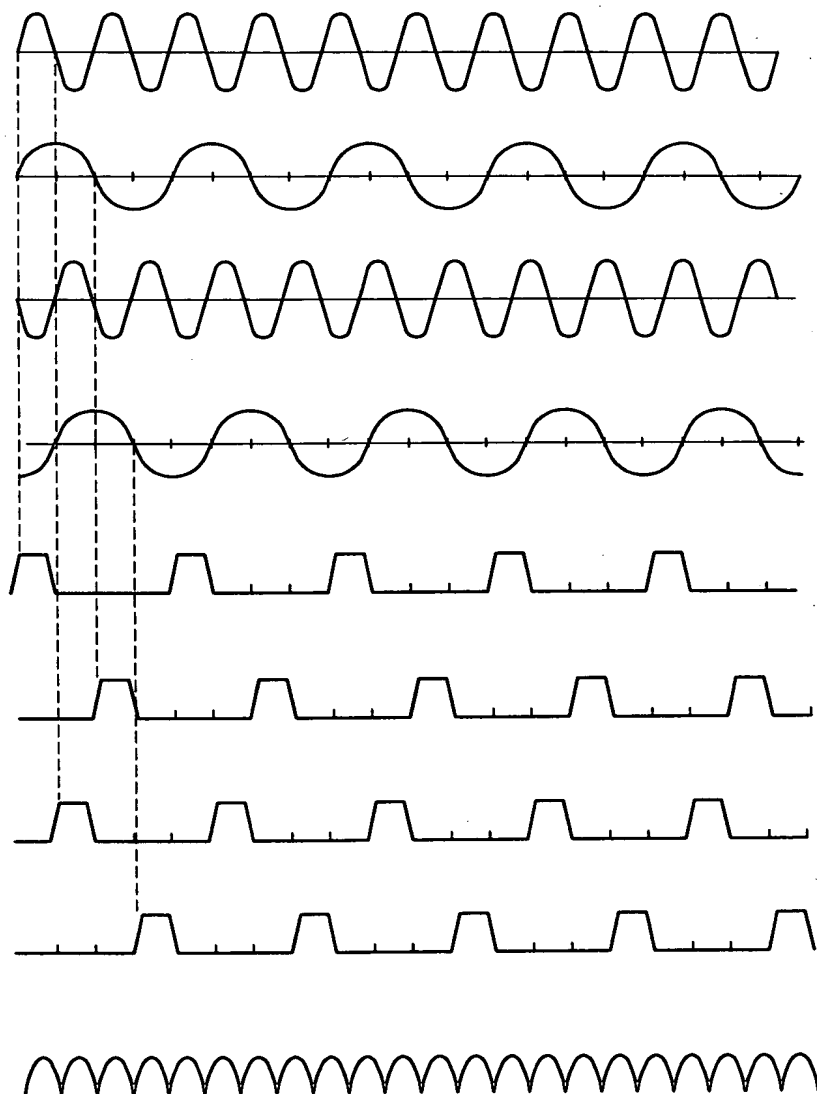


FIG.70C

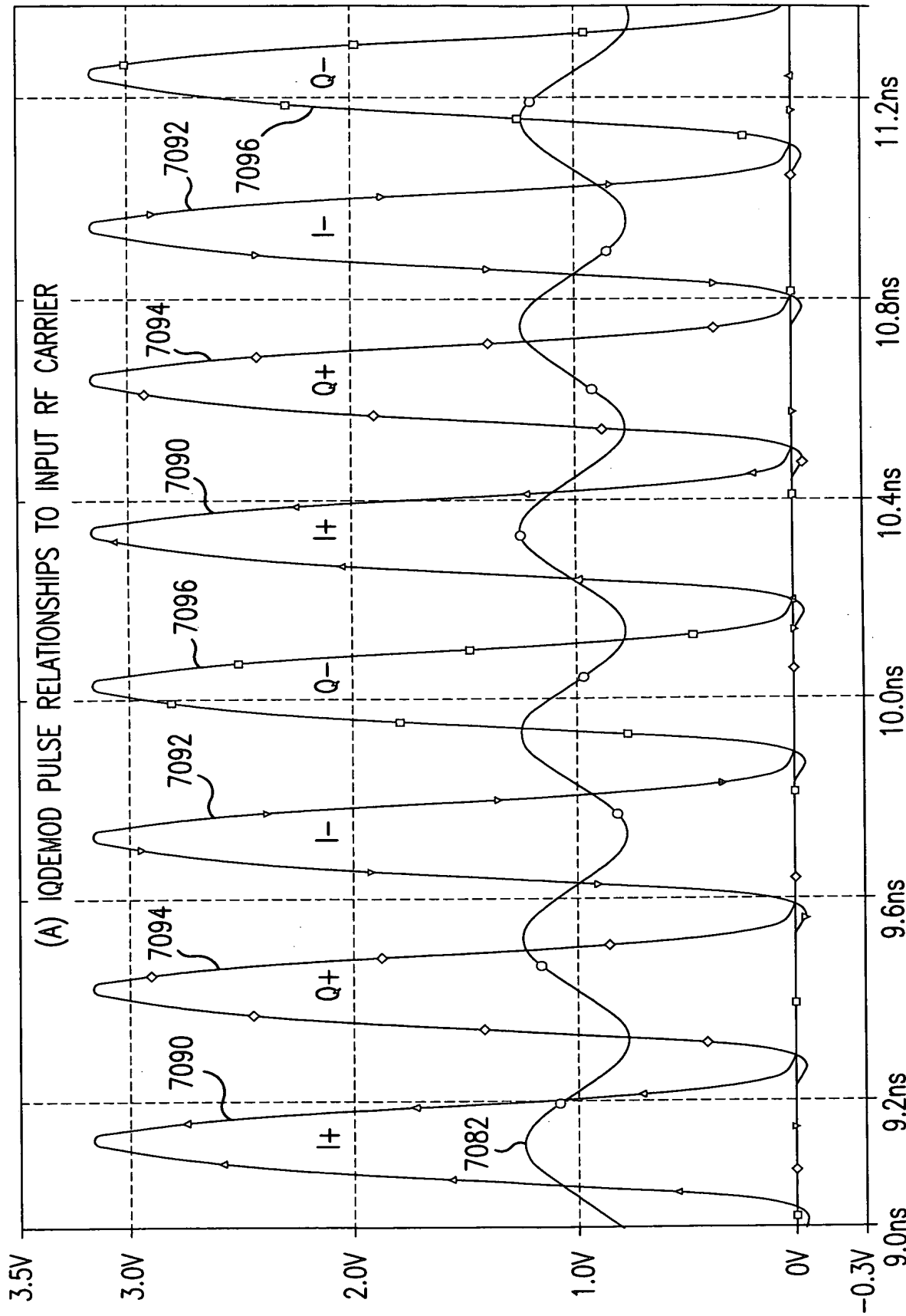
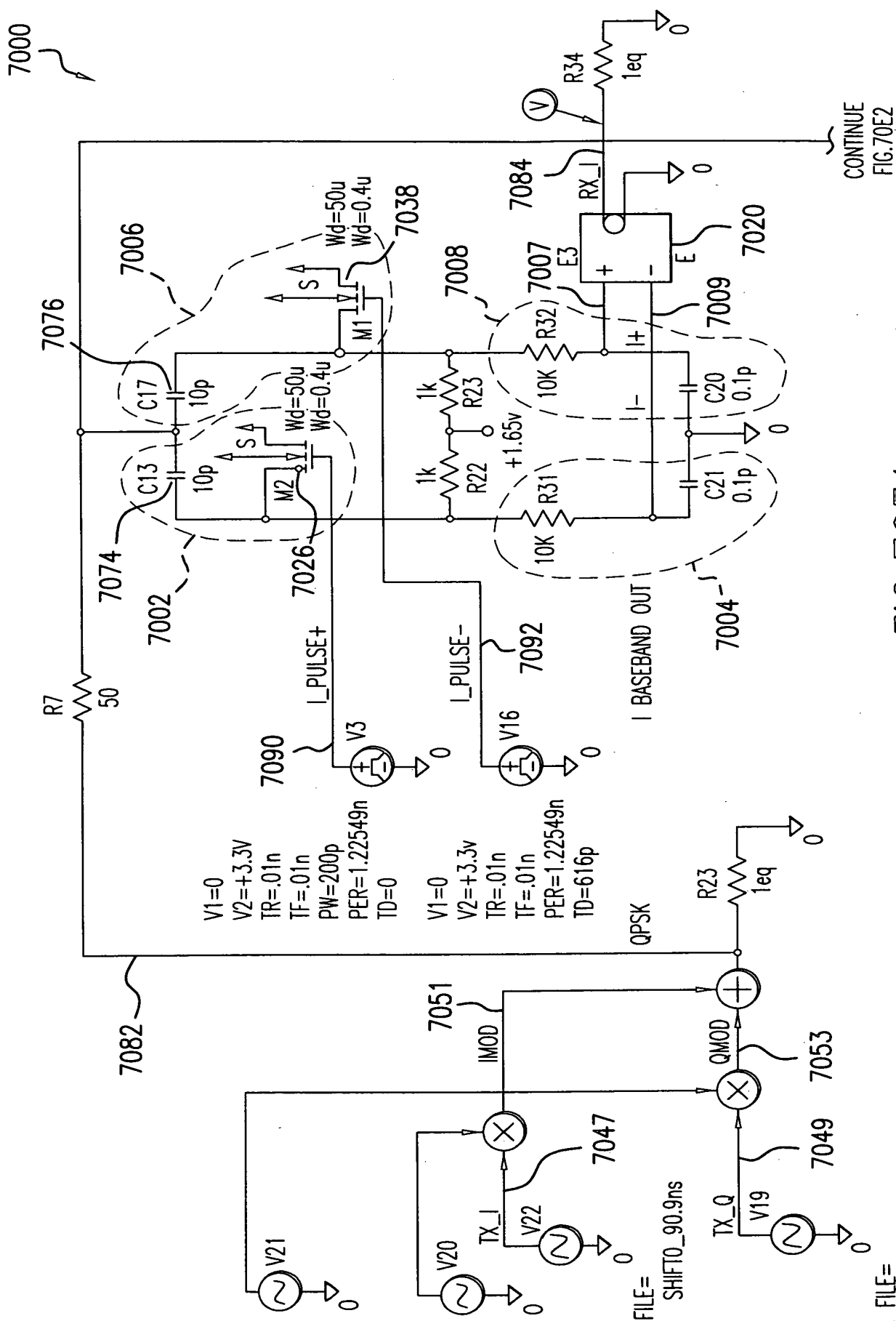


FIG. 70D



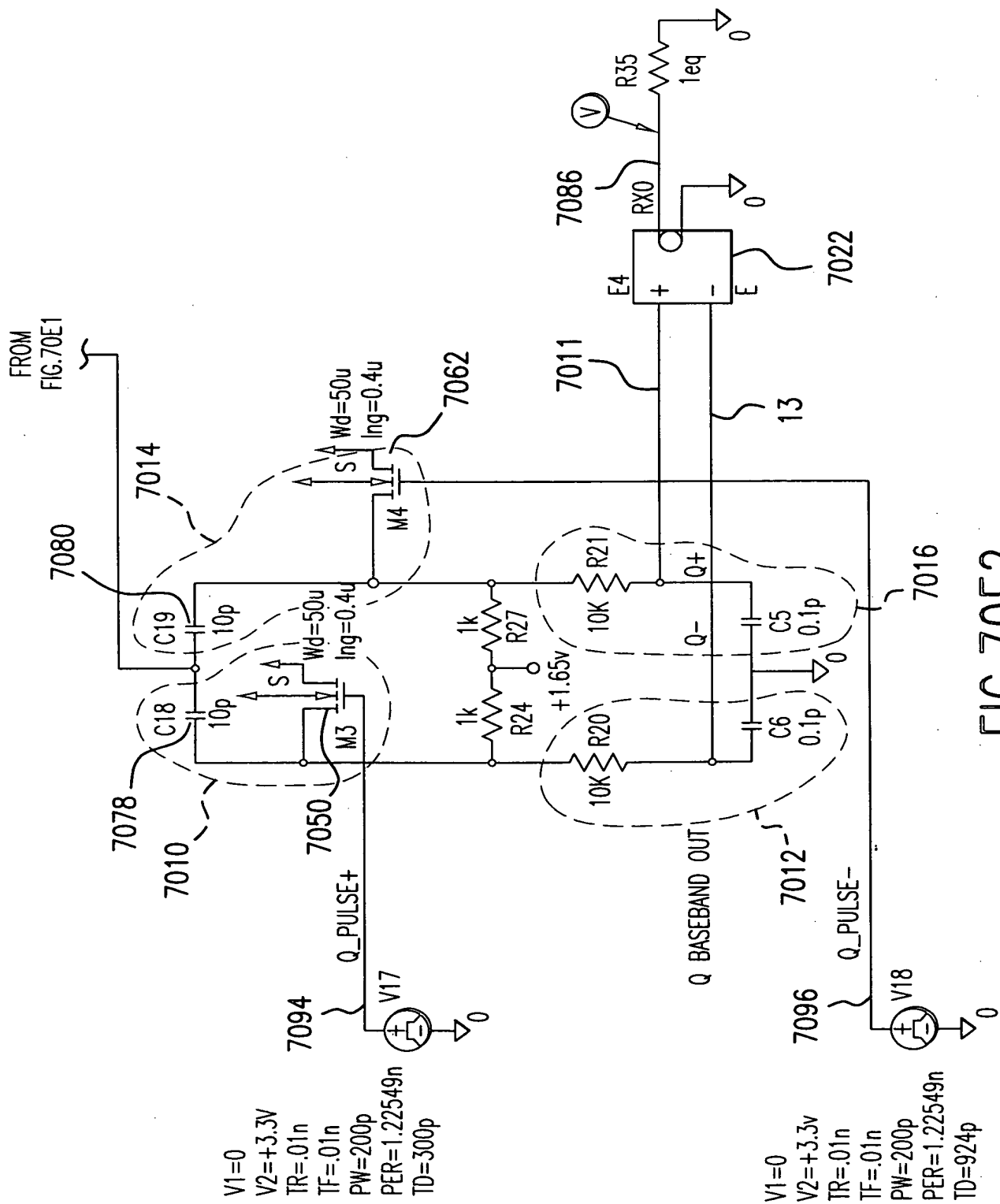
CONTINUE
FIG. 70E2

FIG. 70E¹

FILE=0
SHIFT0_90.9ns

FILE=SHIFT1_90.9ns

MAR 13 2000



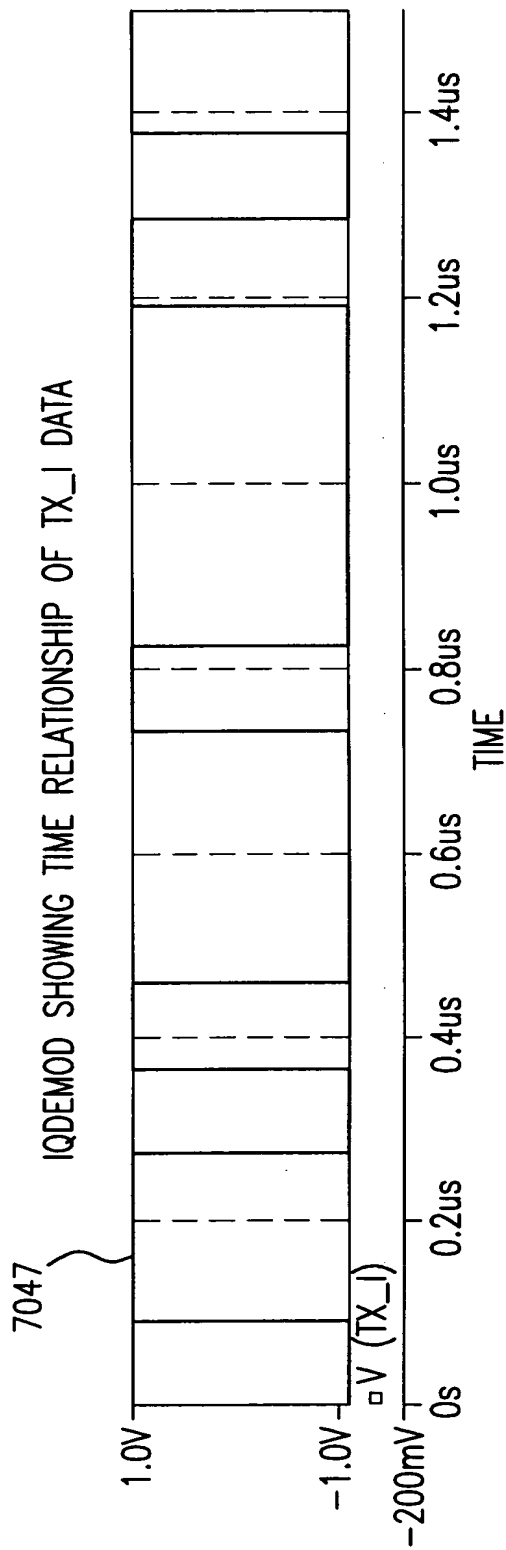


FIG.70F

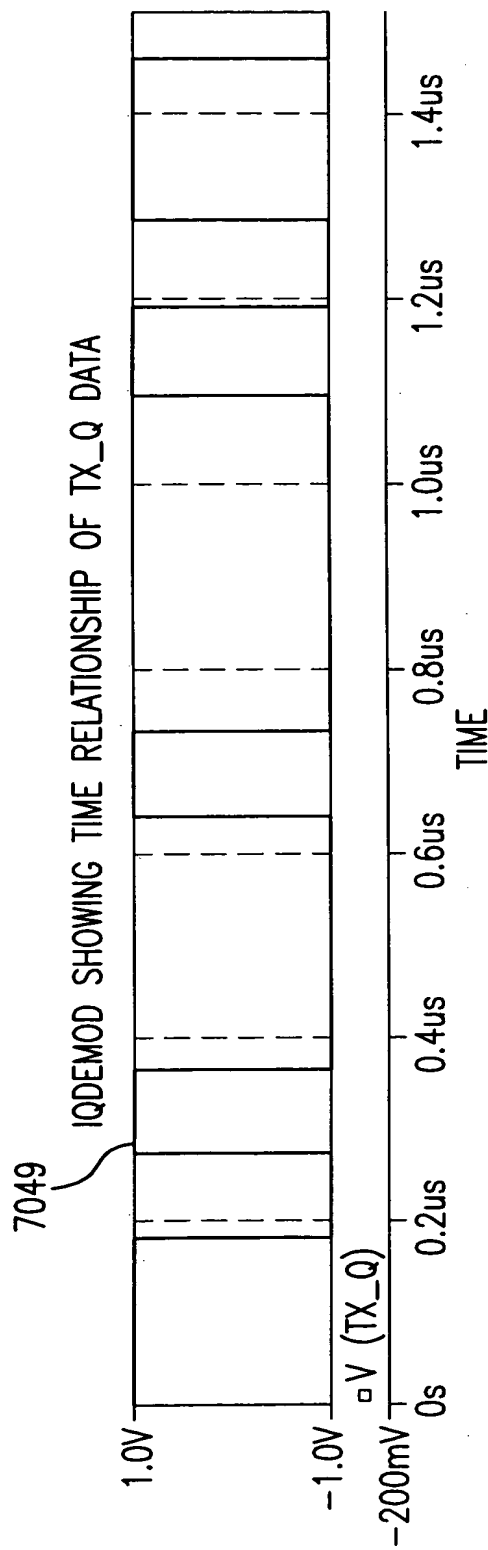


FIG.70G

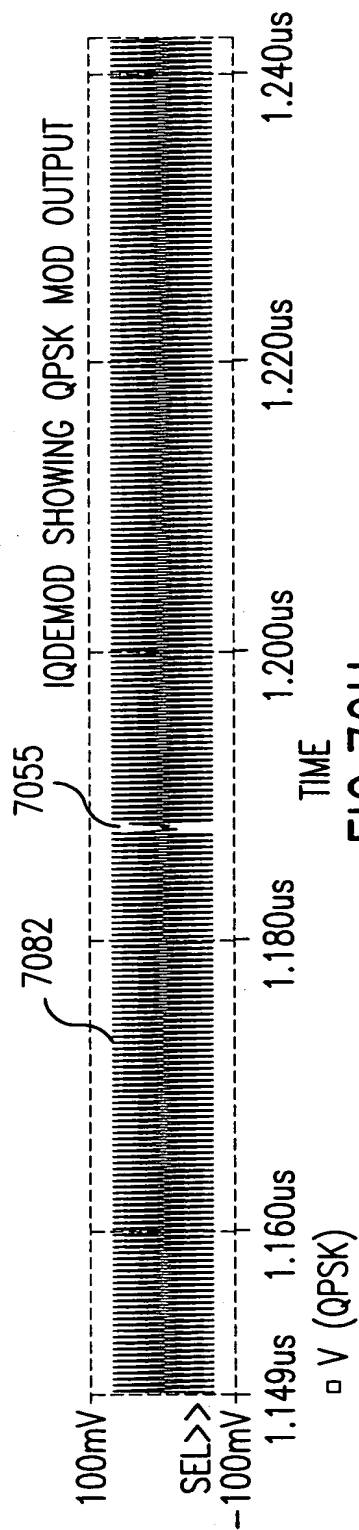


FIG.70H

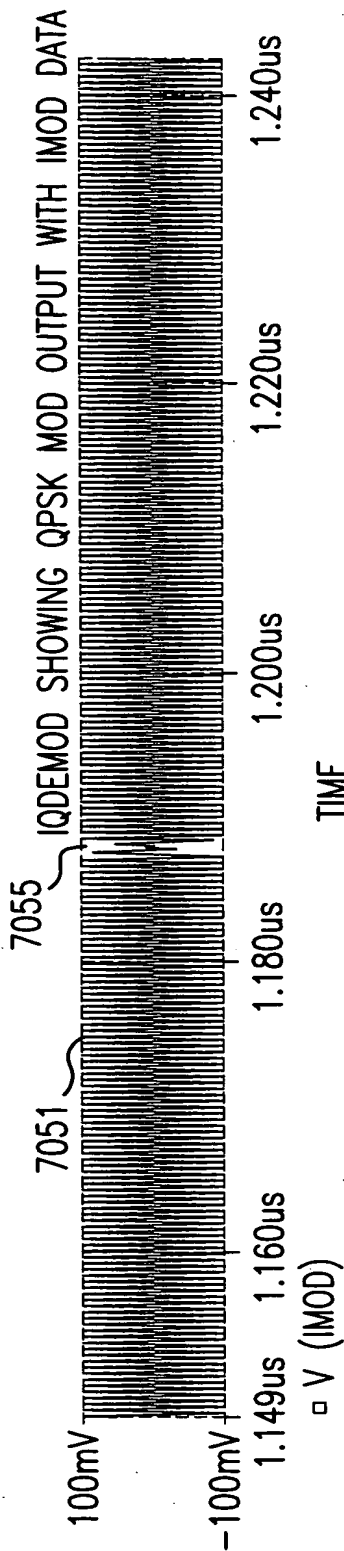


FIG.70I

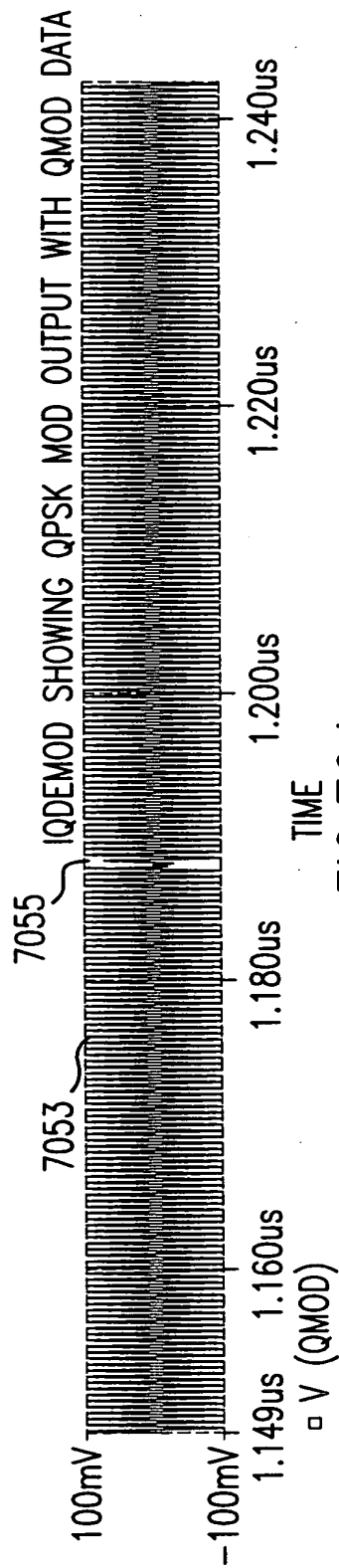


FIG.70J

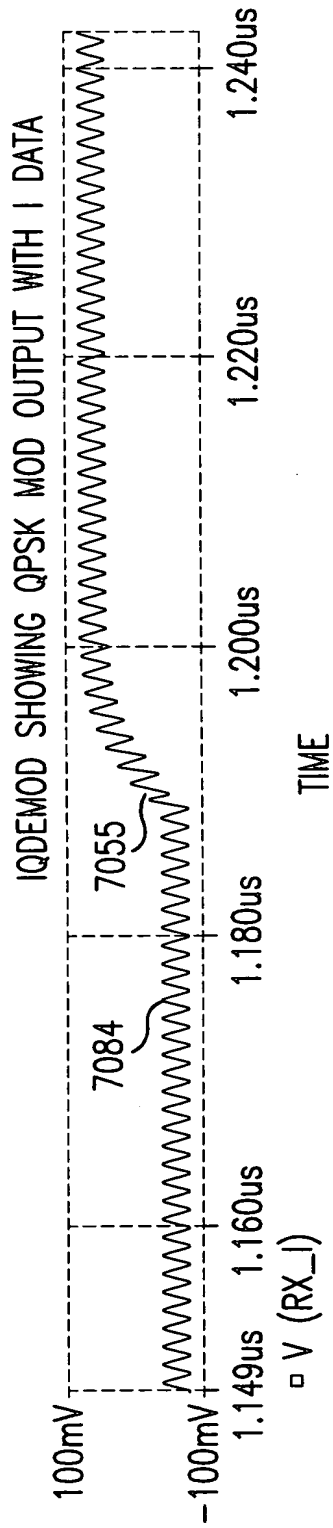


FIG.70K

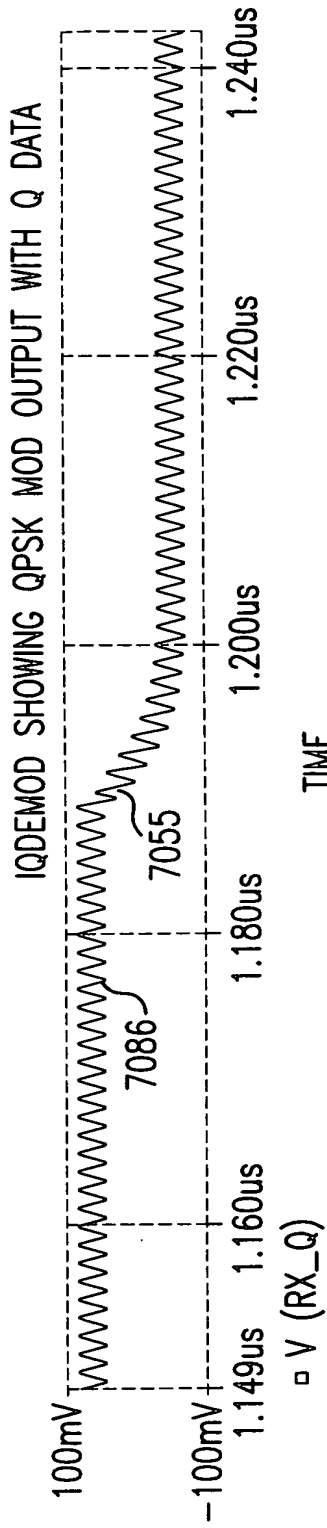


FIG.70L

IQDEMOD RELATIONSHIP OF I RECEIVED DATA DIFFERENTIAL SINGLE ENDED AFTER DIFFERENTIAL AMPLIFIER

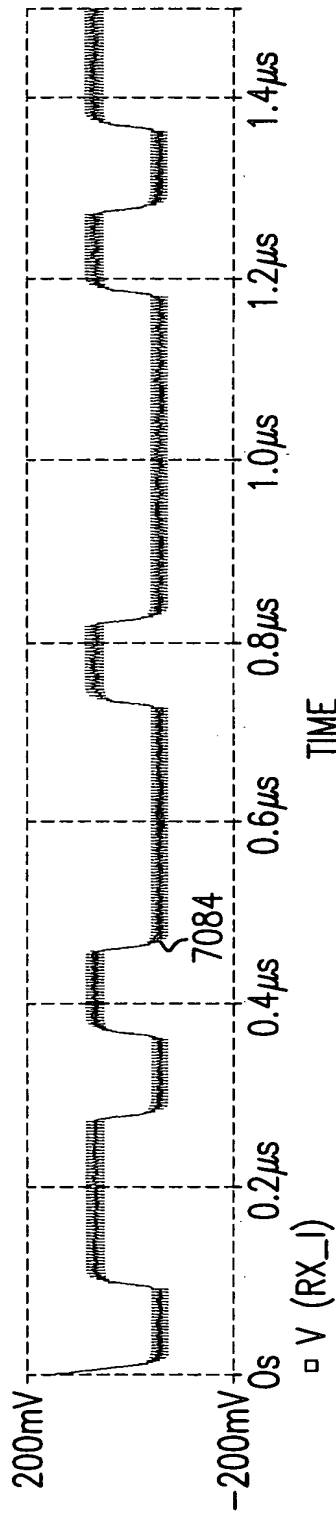


FIG. 70M

IQDEMOD RELATIONSHIP OF Q RECEIVED DATA DIFFERENTIAL SINGLE ENDED AFTER DIFFERENTIAL AMPLIFIER

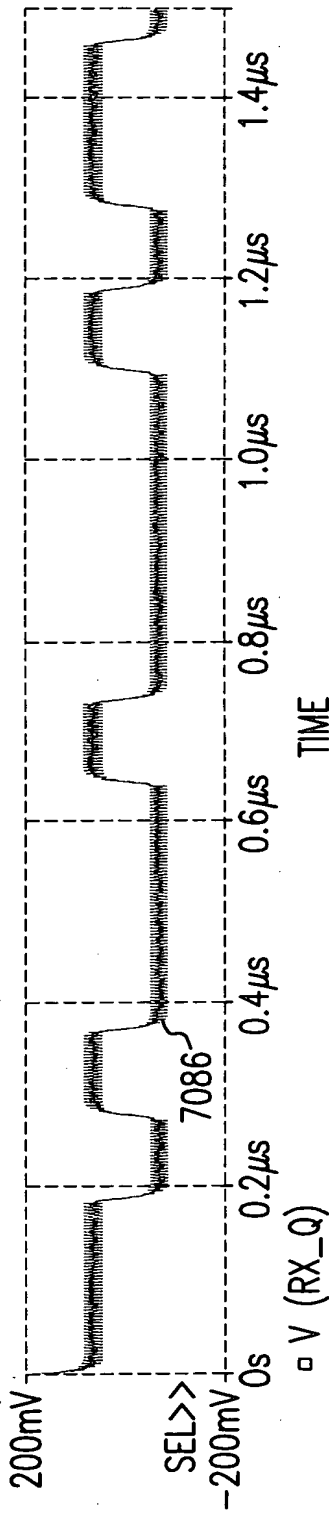


FIG. 70N

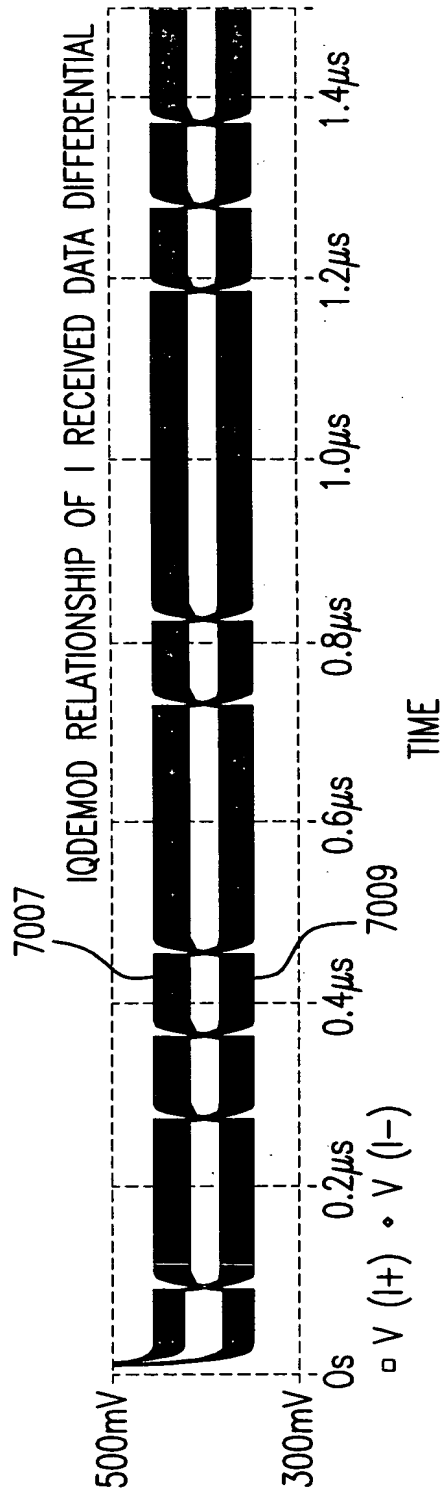


FIG.700

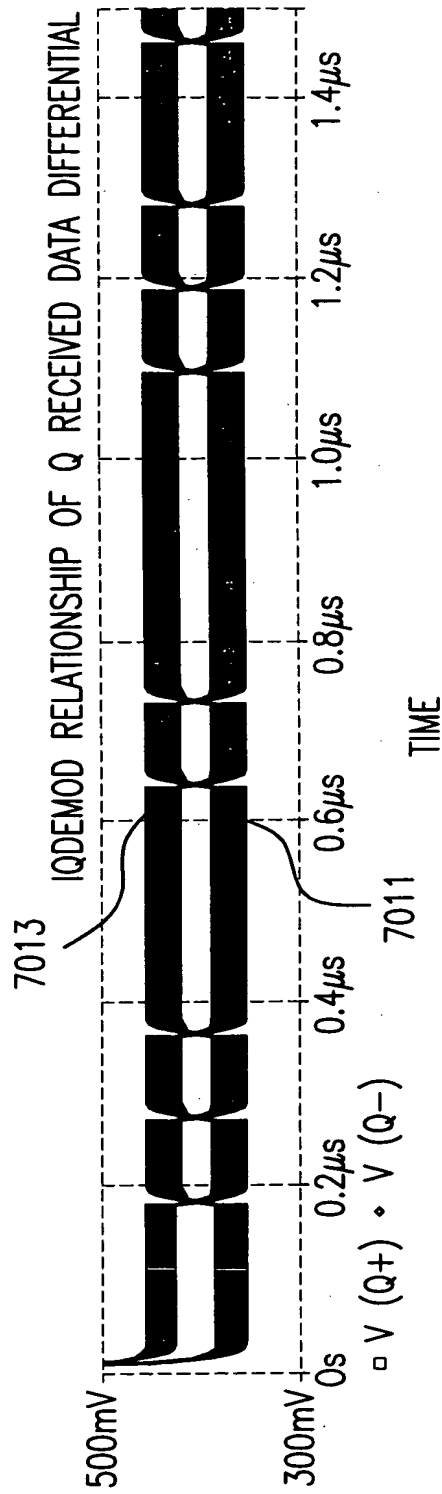


FIG.70P

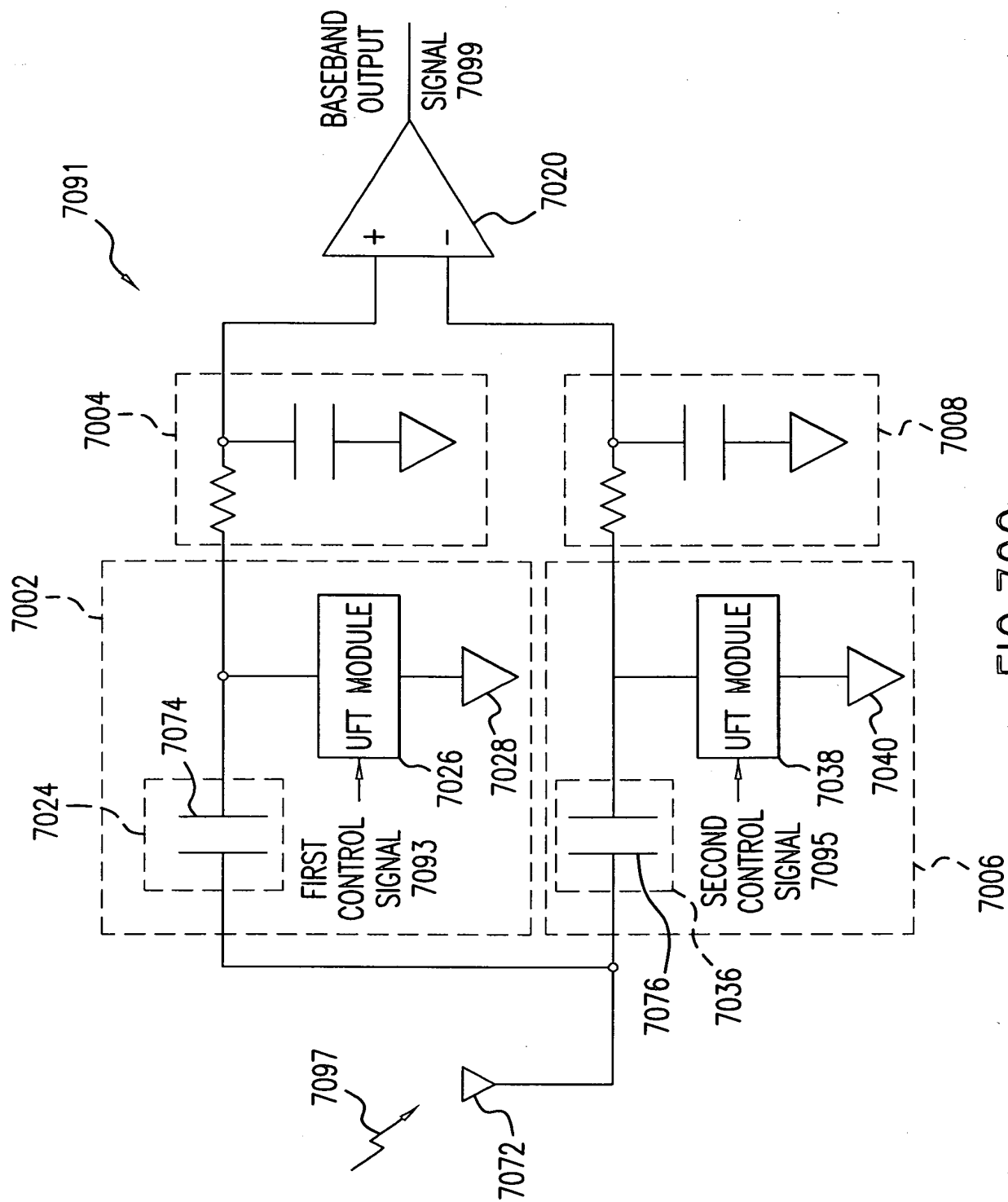


FIG. 700Q

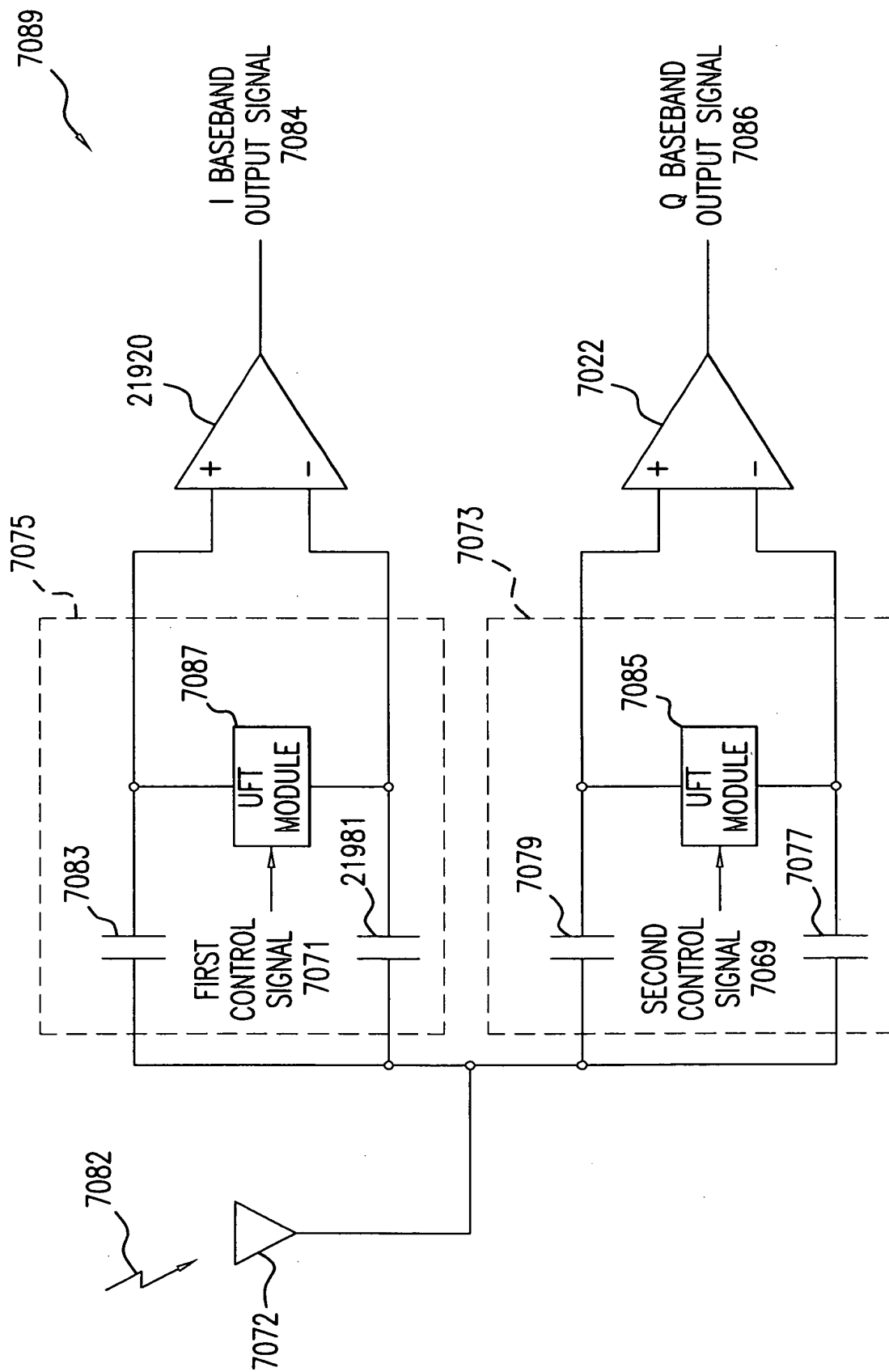


FIG. 70R

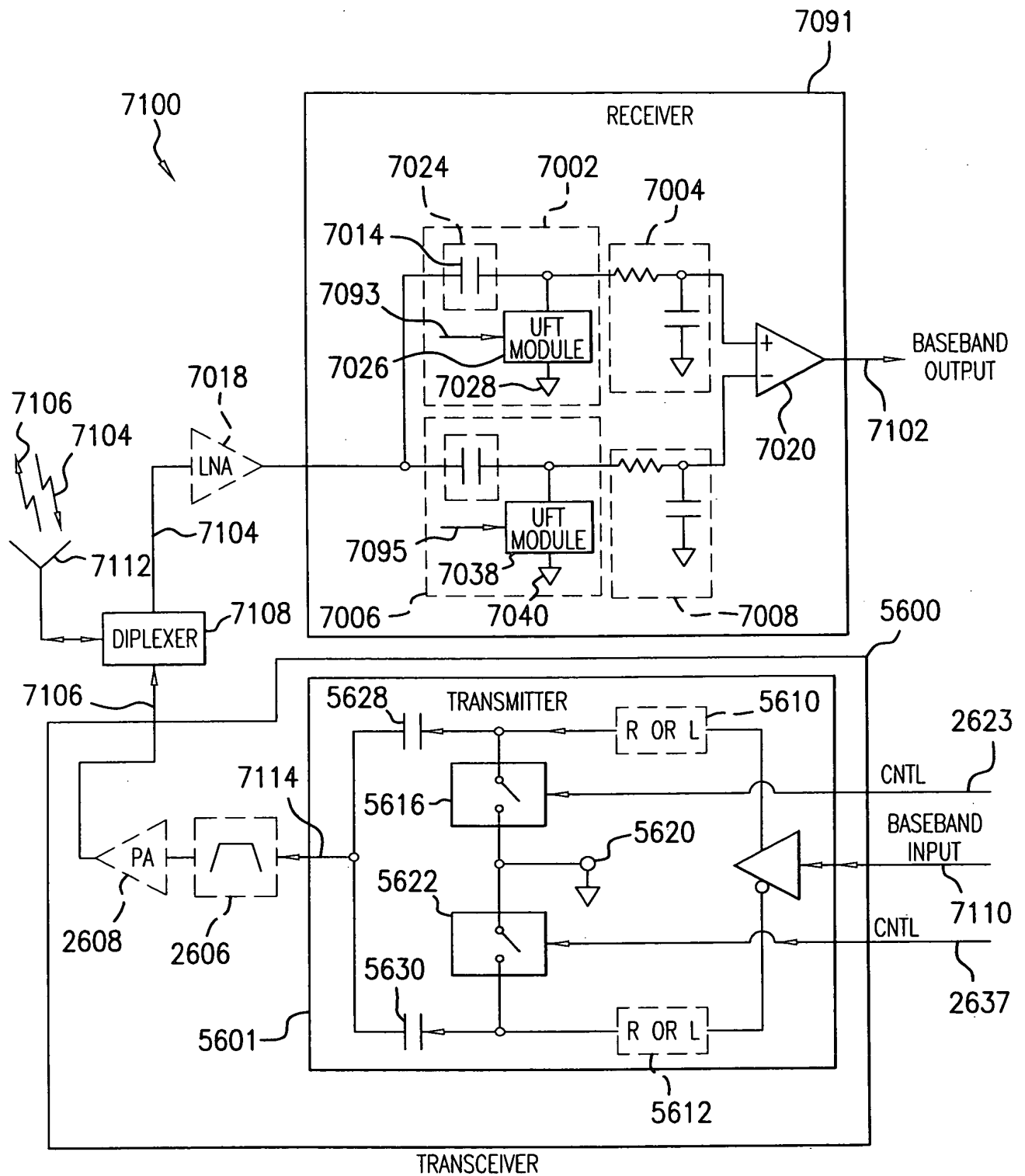


FIG. 71

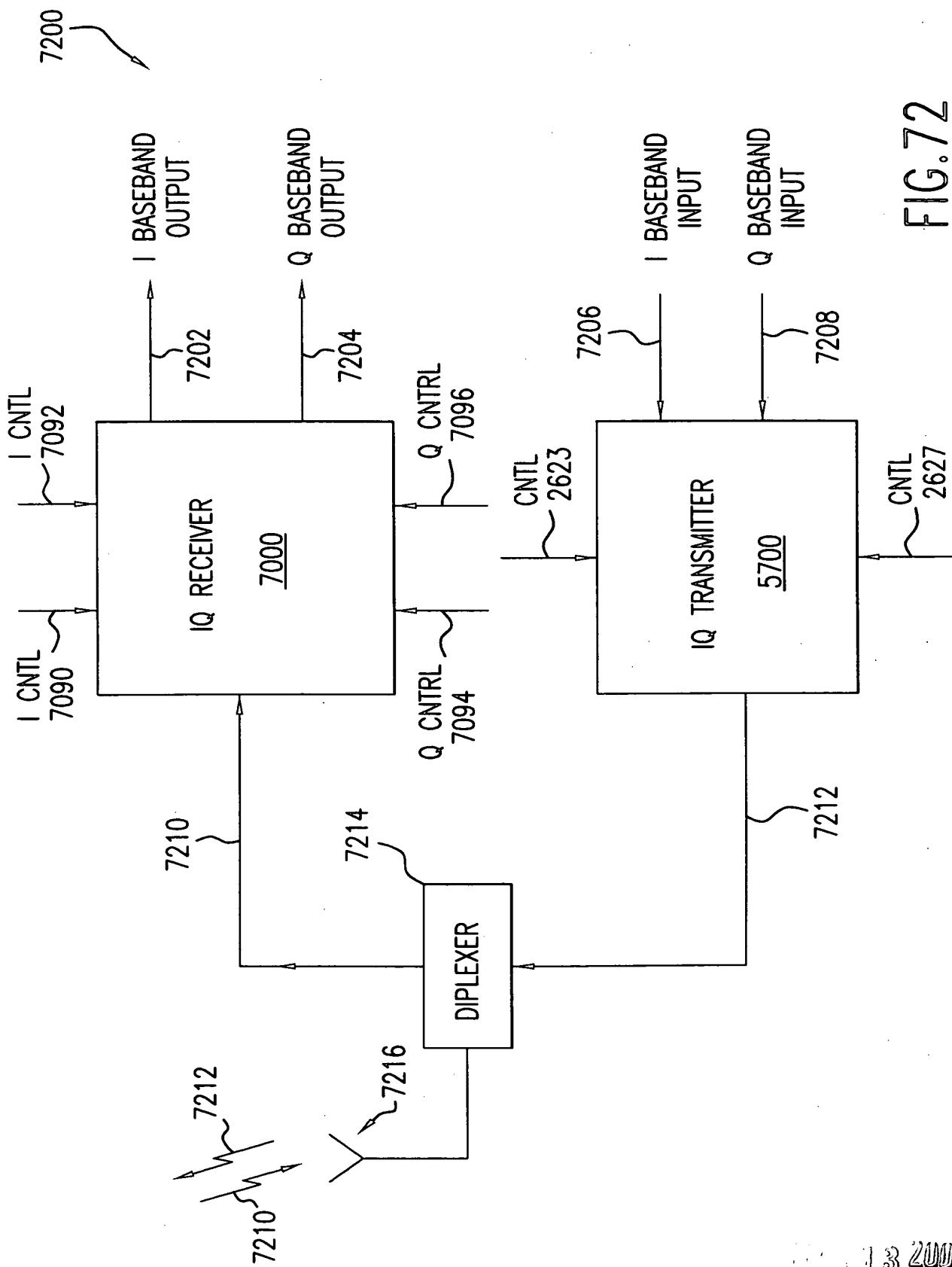


FIG. 72

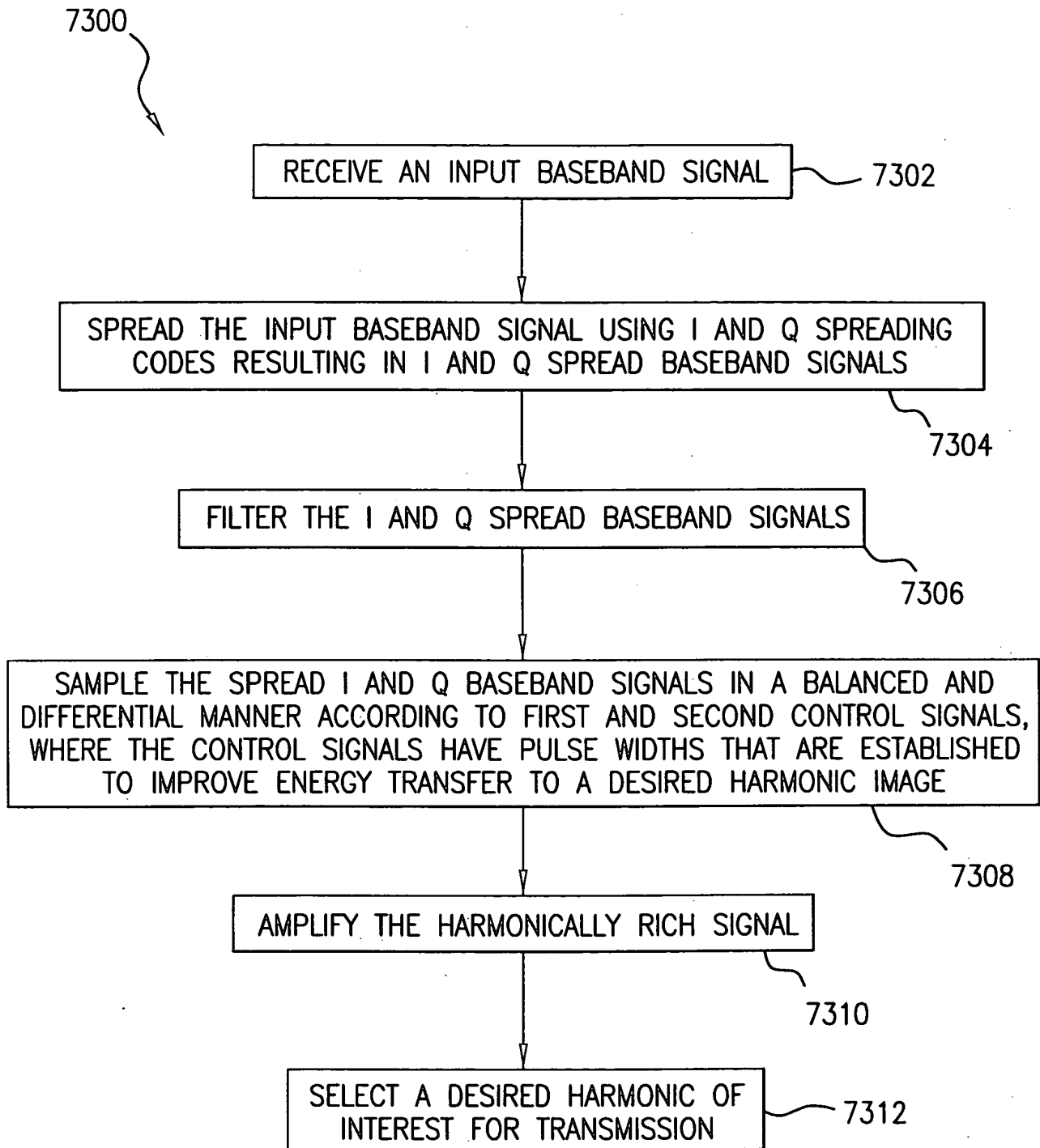


FIG.73

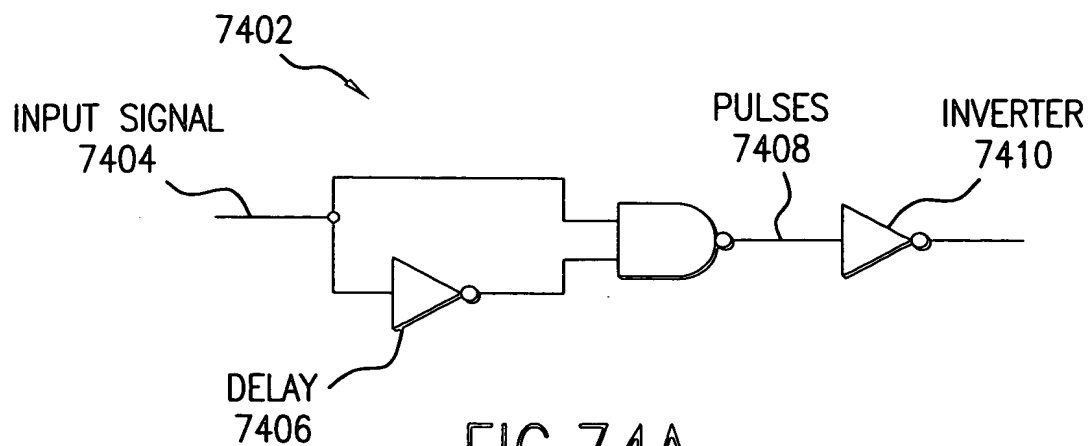


FIG. 74A

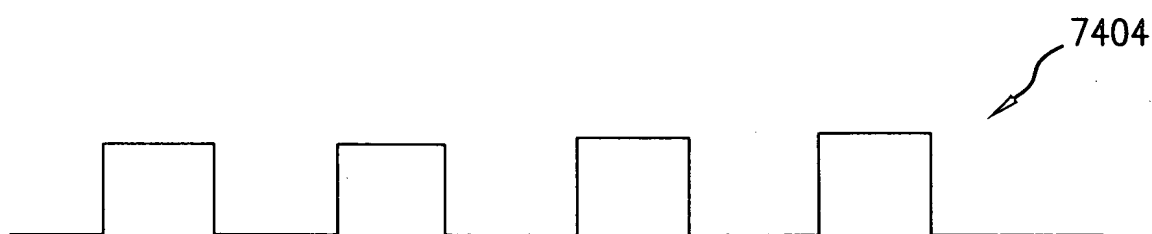


FIG. 74B

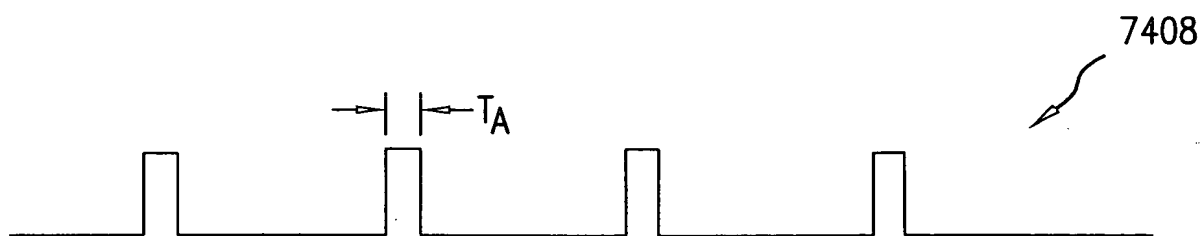


FIG. 74C

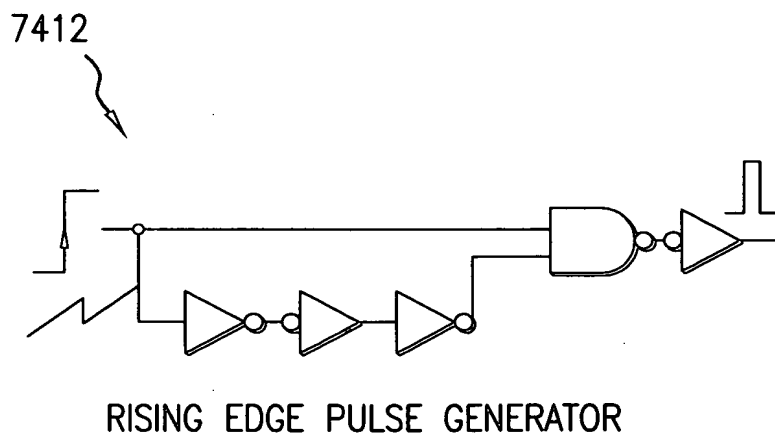


FIG. 74D

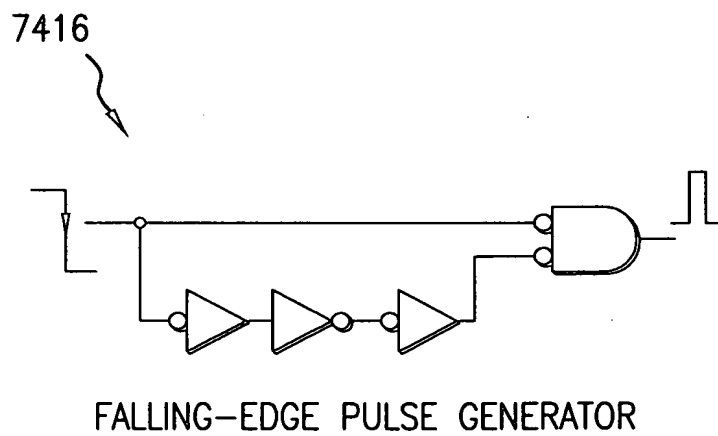


FIG. 74E